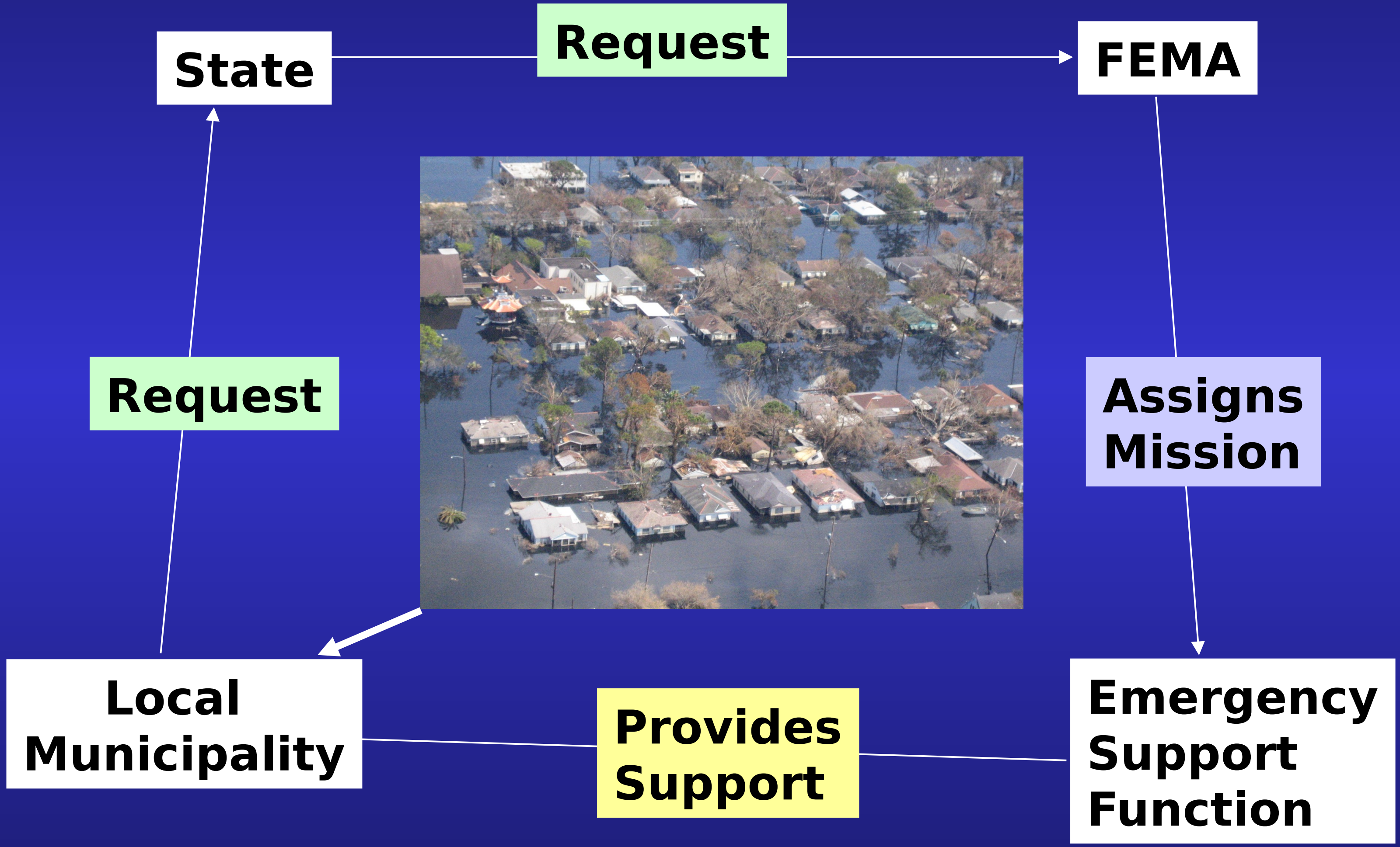
US Army Corps
of Engineers ®

Hurricanes Katrina and Rita:

The Unwatering of New Orleans

Colonel Duane Gapinski, P.E.

National Response Plan



State

Request

FEMA

Assigns Mission

Emergency Support Function

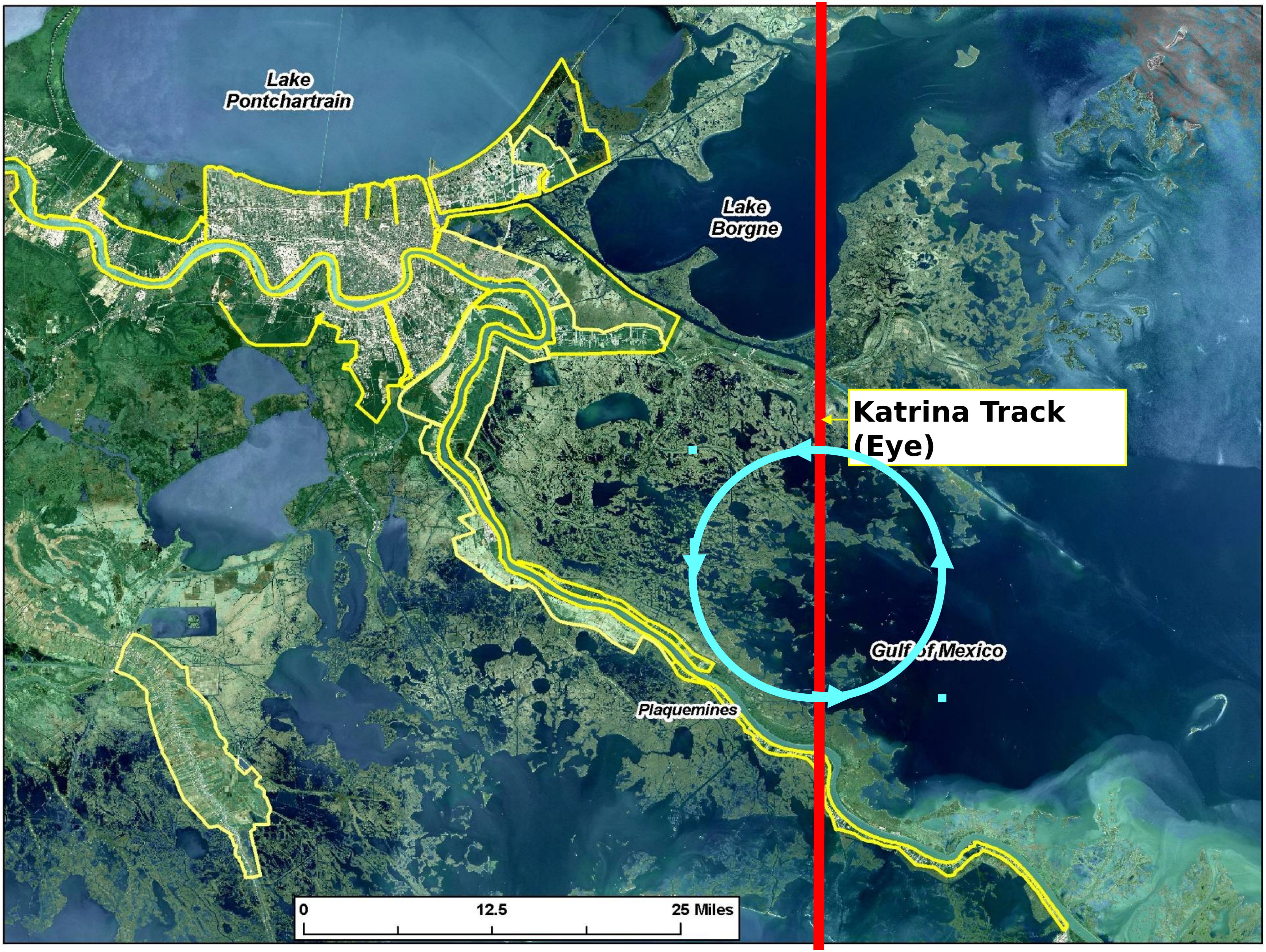
Provides Support

Local Municipality

Request

Task Force Unwatering

Mission: Unwater the areas affected by Hurricane Katrina (and later, Rita) so traditional recovery operations can begin.


Lake Pontchartrain
Lake Borgne
Gulf of Mexico
Plaquemines
0
12.5
25 Miles

Katrina Track (Eye)

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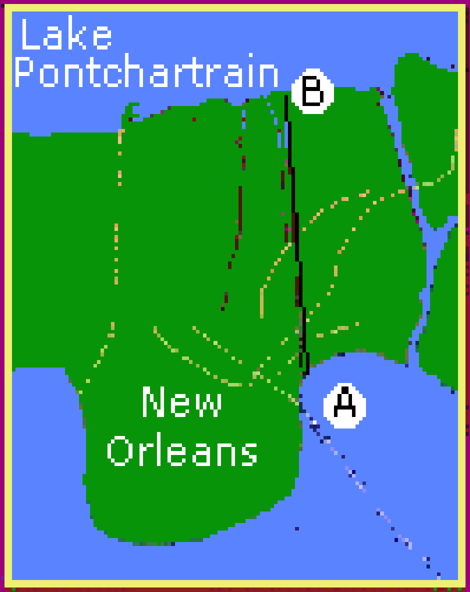
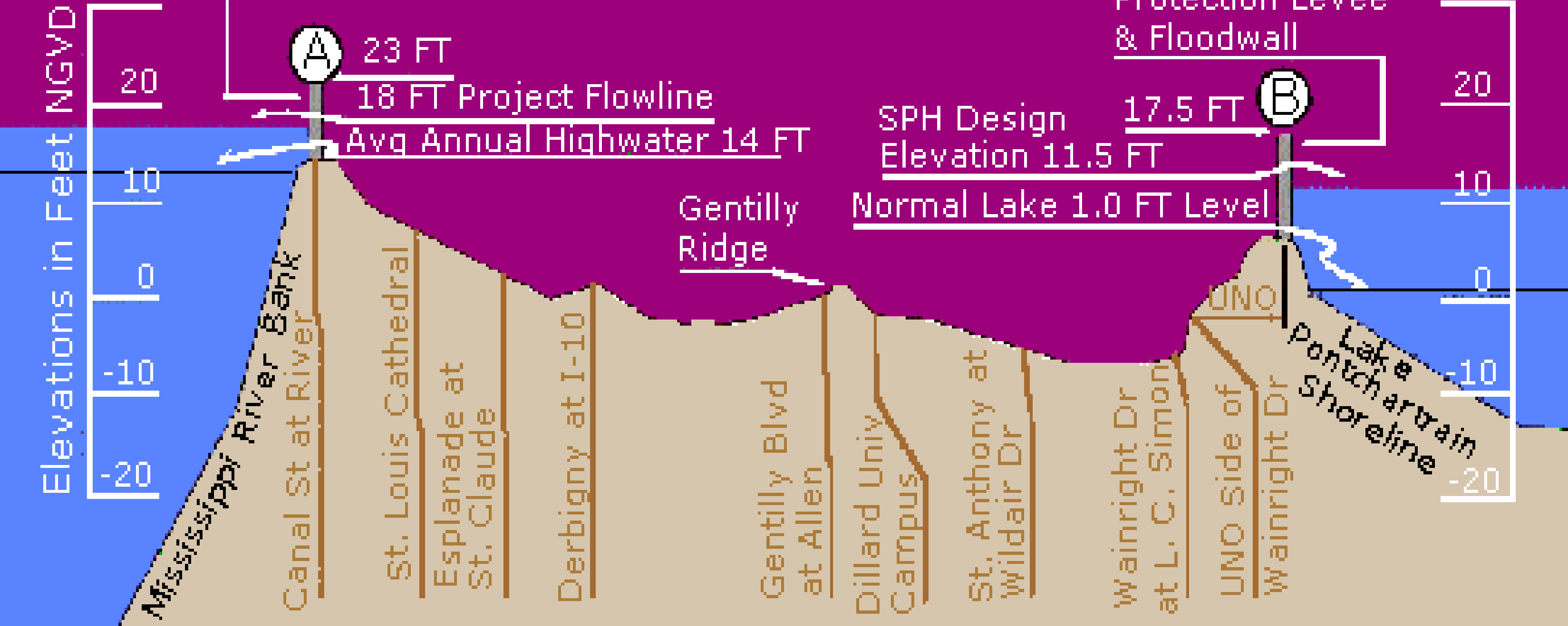
Storm Surge

City of New Orleans Ground Elevations

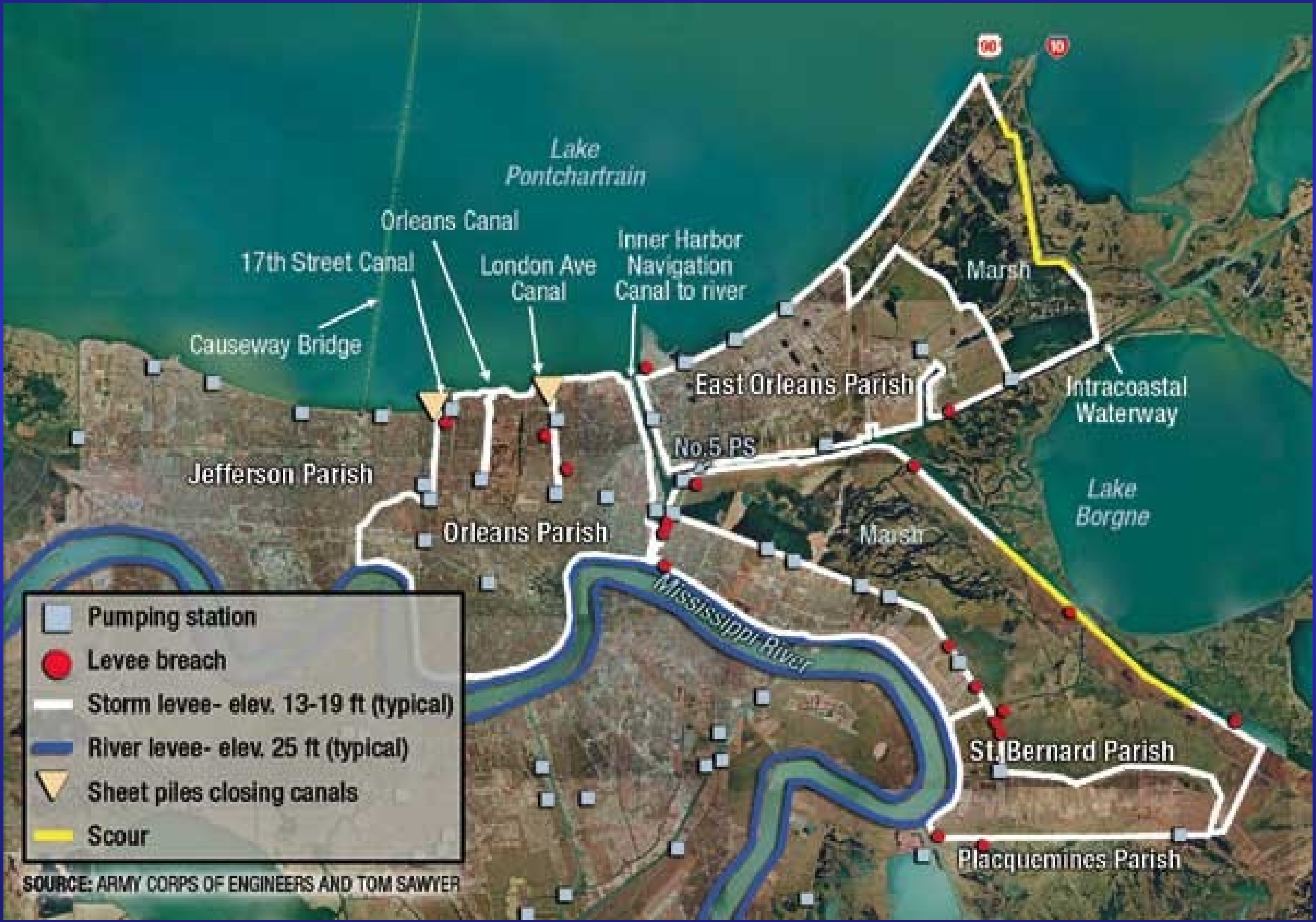
From Canal St. at Mississippi River to the Lakefront at U.N.O.

Area Map


Lake Pontchartrain
B
A
New Orleans


Floodwall Along Mississippi River
Hurricane Protection Levee & Floodwall
Elevations in Feet NGVD
30
20
10
0
-10
-20
A
23 FT
18 FT Project Flowline
Avg Annual Highwater 14 FT
B
17.5 FT
SPH Design Elevation 11.5 FT
Normal Lake 1.0 FT Level
Gentilly Ridge
UNO
Mississippi River Bank
Canal St at River
St. Louis Cathedral
Esplanade at St. Claude
Derbigny at I-10
Gentilly Blvd at Allen
Dillard Univ Campus
St. Anthony at Wildair Dr
Wainright Dr at L. C. Simon
UNO Side of Wainright Dr
Lake Pontchartrain Shoreline

Metropolitan New Orleans

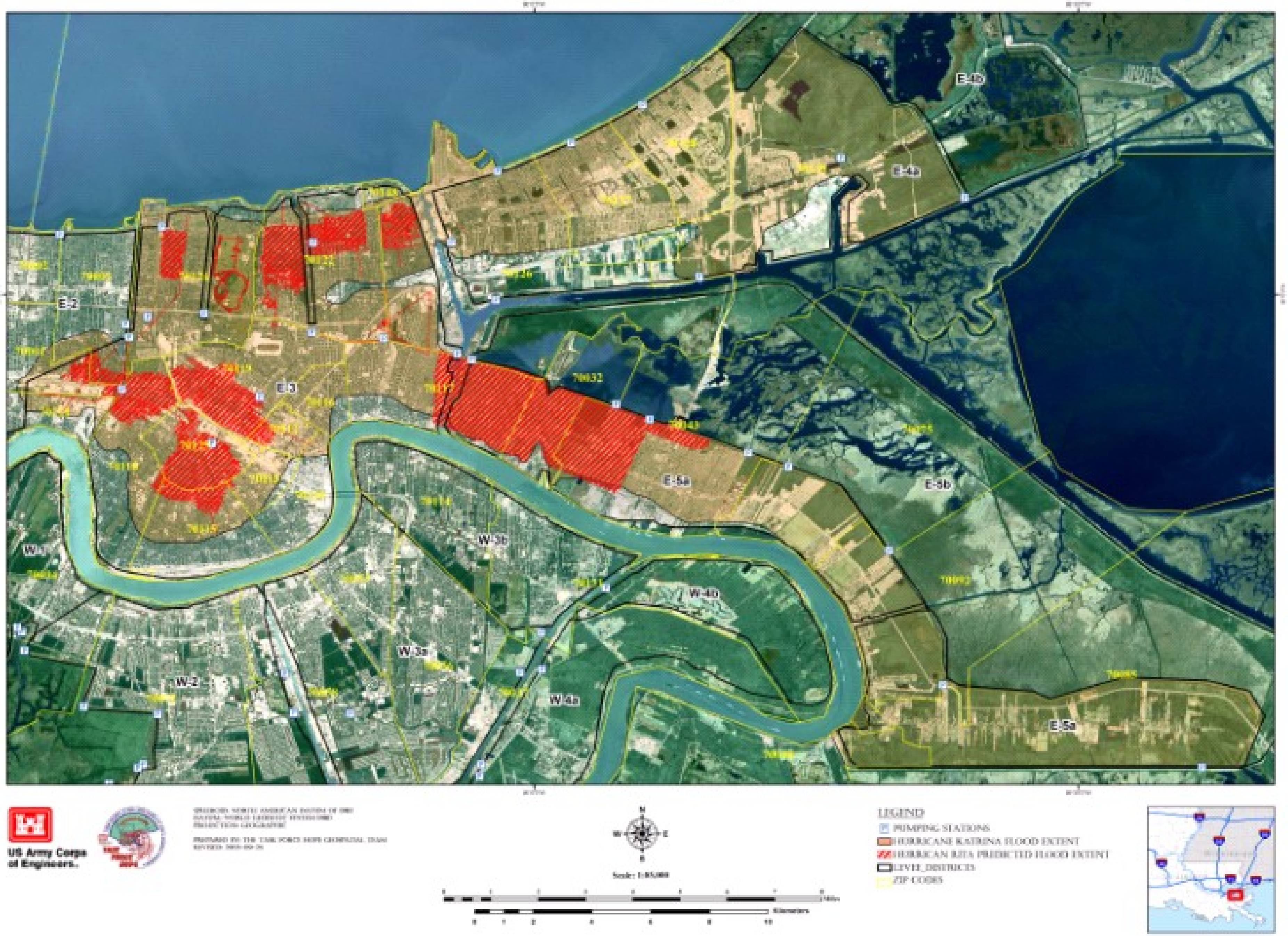

90
10
Lake
Pontchartrain
Orleans Canal
17th Street Canal
London Ave
Canal
Inner Harbor
Navigation
Canal to river
Causeway Bridge
Marsh
East Orleans Parish
Intracoastal
Waterway
No.5 PS
Jefferson Parish
Orleans Parish
Lake
Borgne
Marsh
Mississippi River
St. Bernard Parish
Placquemines Parish
Pumping station
Levee breach
Storm levee- elev. 13-19 ft (typical)
River levee- elev. 25 ft (typical)
Sheet piles closing canals
Scour

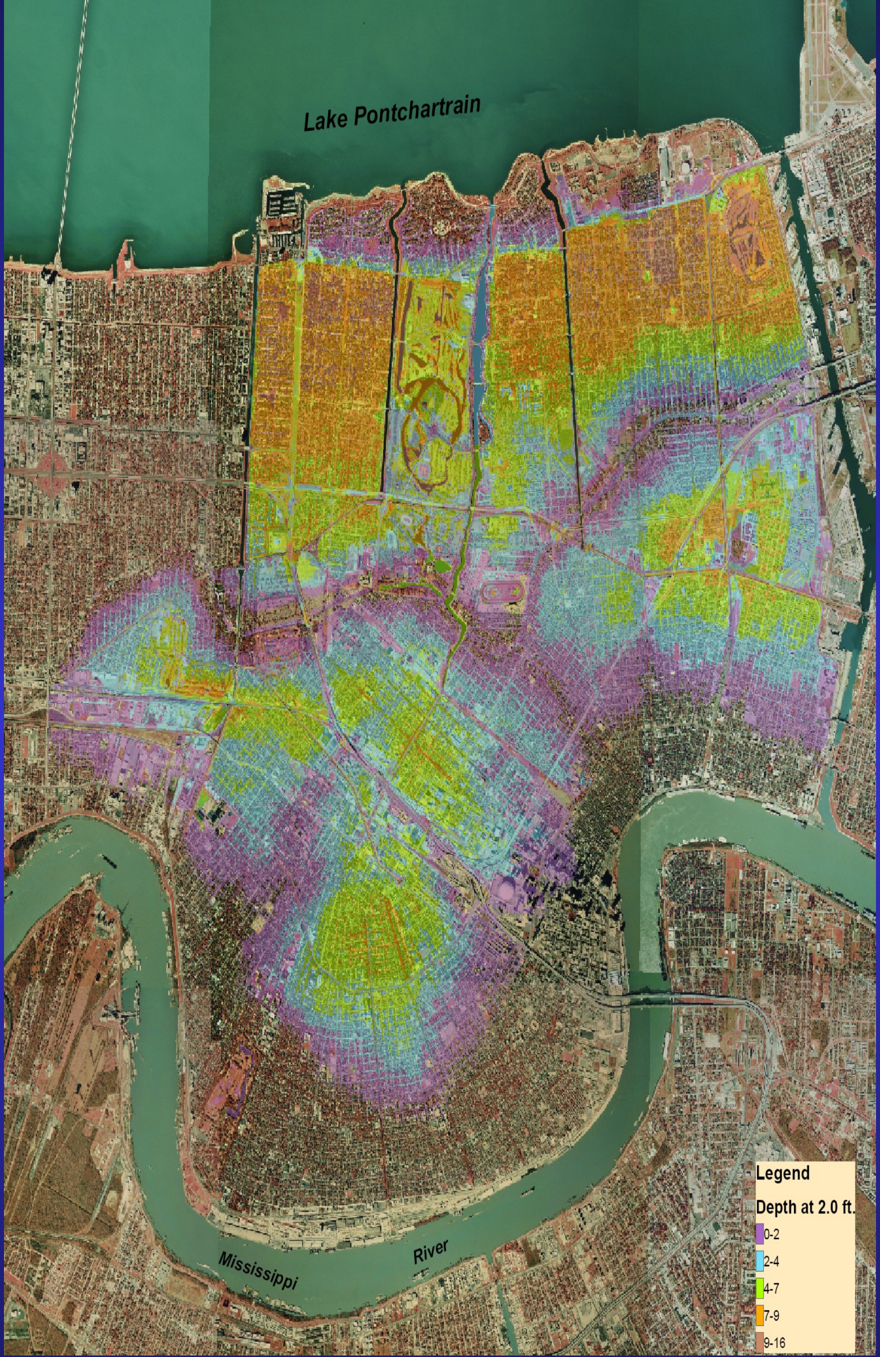
SOURCE: ARMY CORPS OF ENGINEERS AND TOM SAWYER

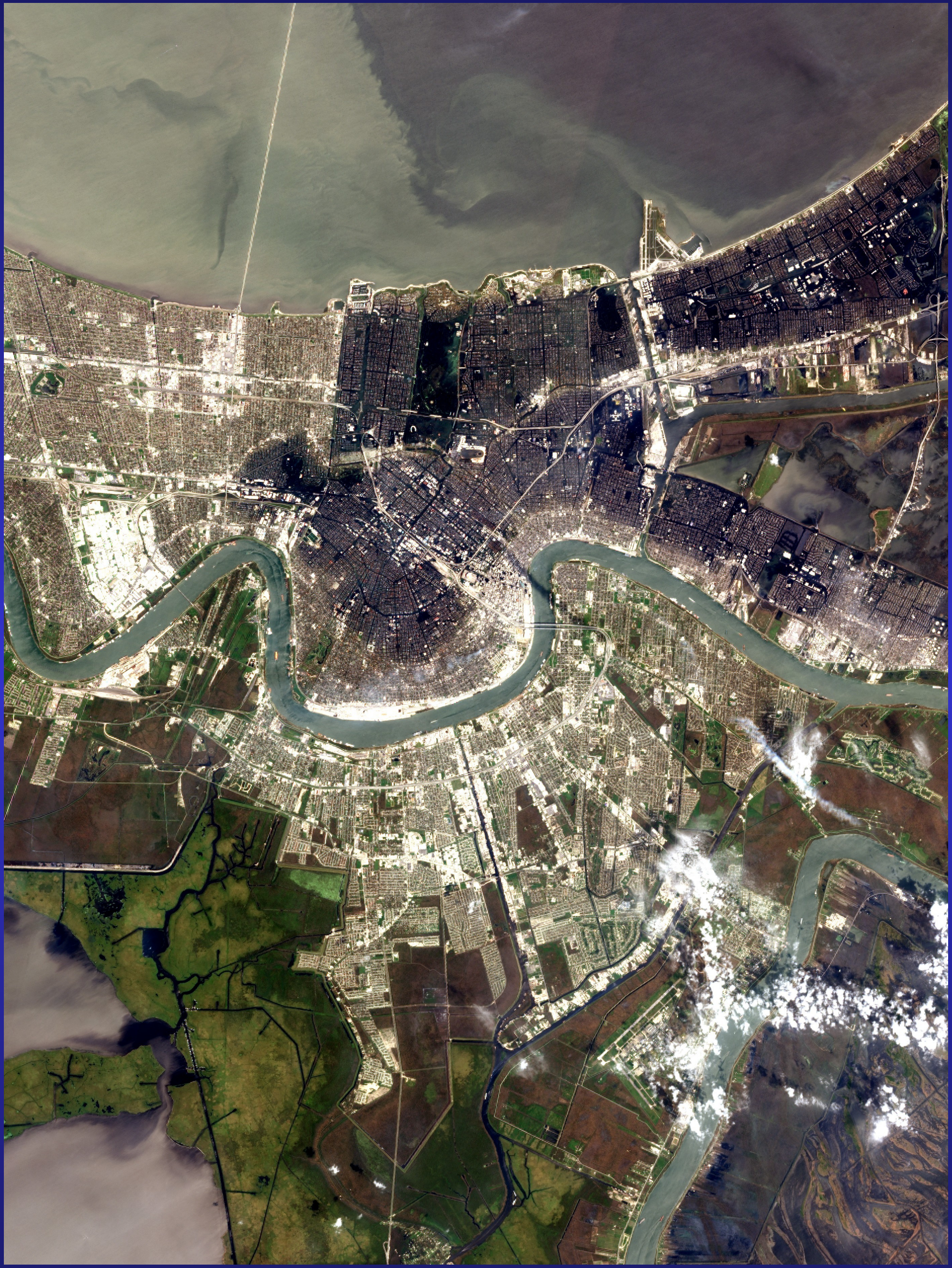
US Army Corps of Engineers ®

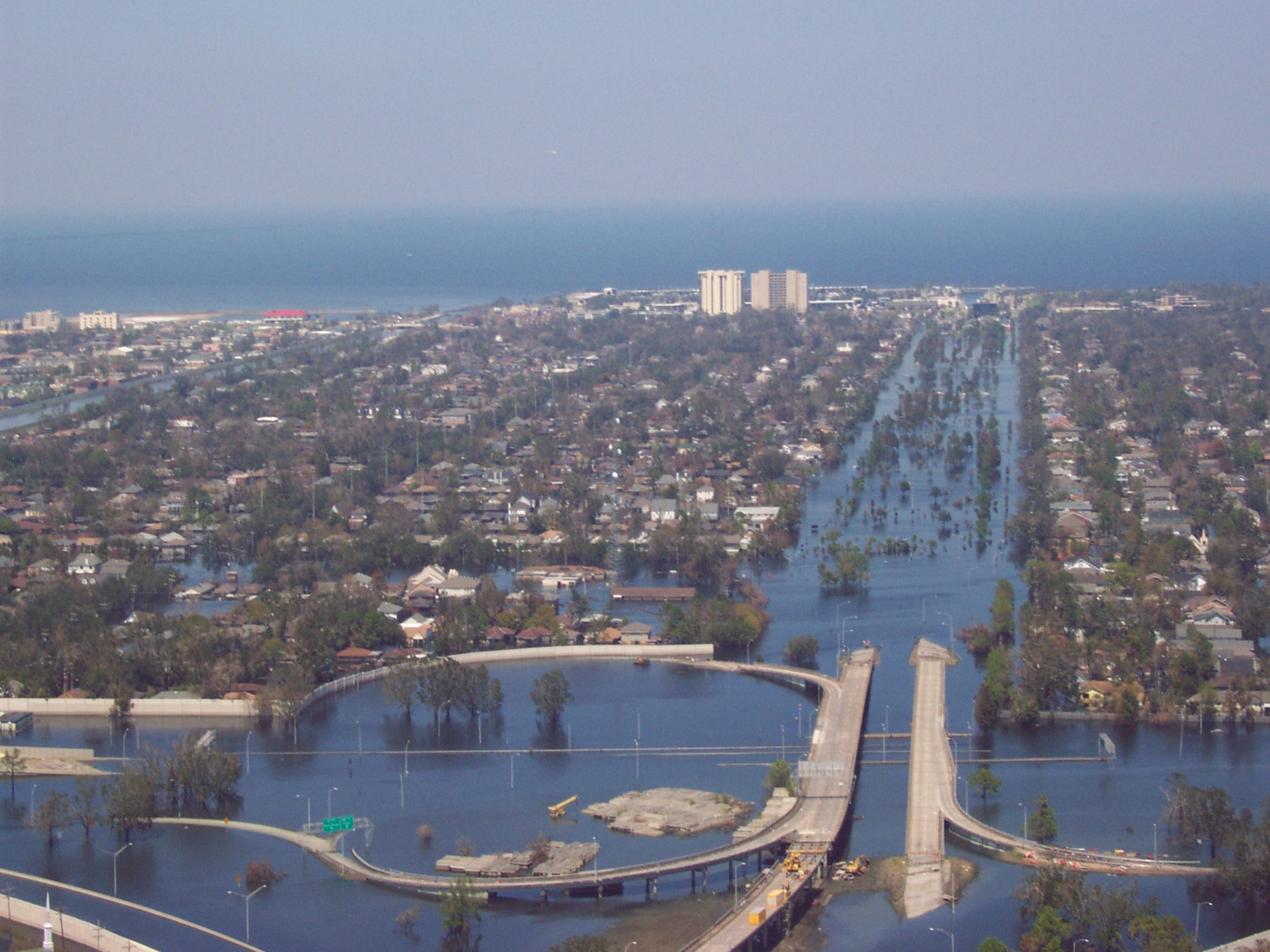
Drainage System

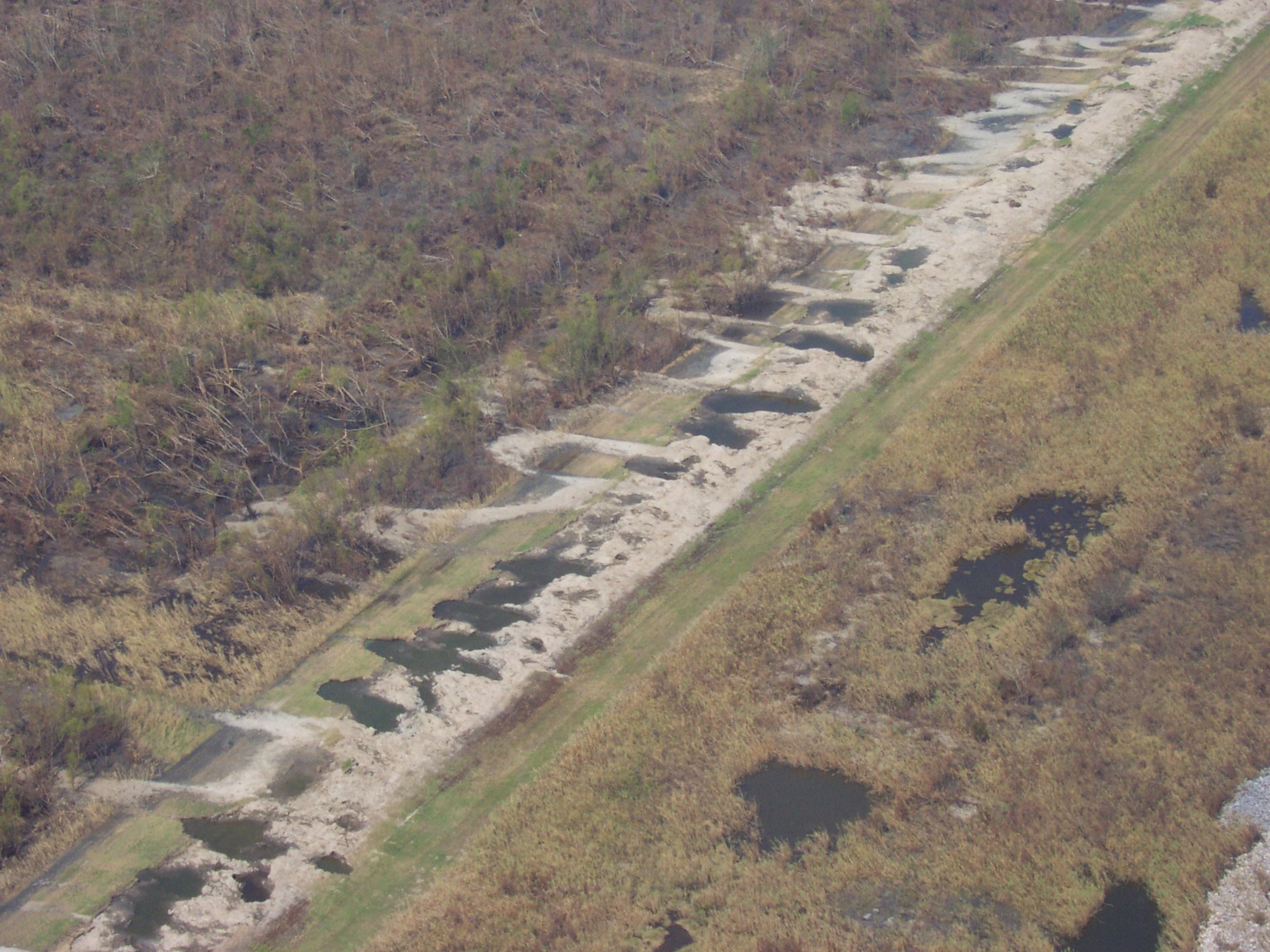
New Orleans Flooding

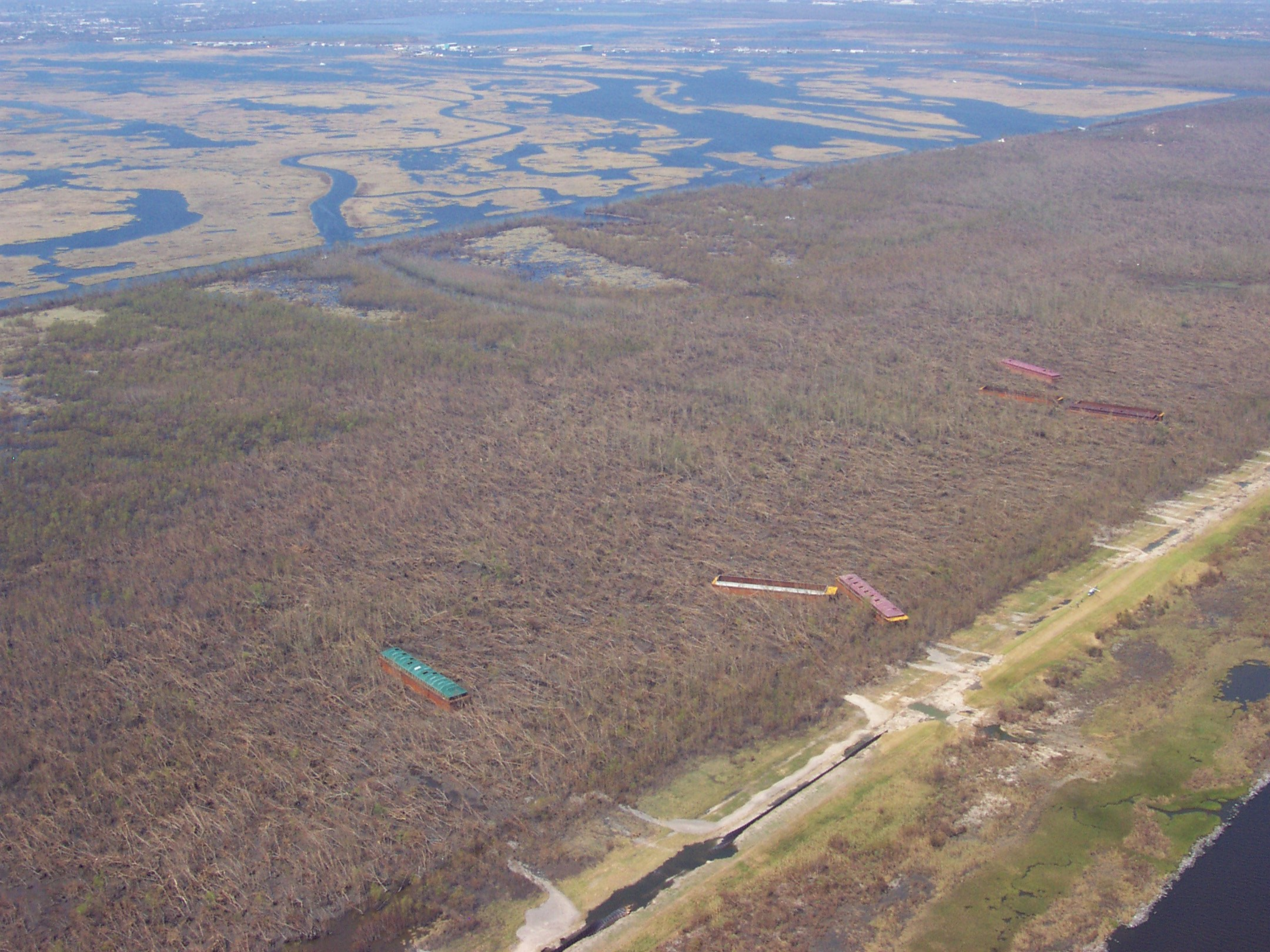

E-2
E-3
E-4a
E-4b
E-5a
E-5b
W-1
W-2
W-3a
W-3b
W-4a
W-4b
70032
70043
70092
US Army Corps of Engineers.
N
S
E
W
Scale: 1:85,000
Miles
Kilometers
0
1
2
4
6
8
10
LEGEND
PUMPING STATIONS
HURRICANE KATRINA FLOOD EXTENT
HURRICAN RITA PREDICTED FLOOD EXTENT
LEVEE_DISTRICTS
ZIP CODES

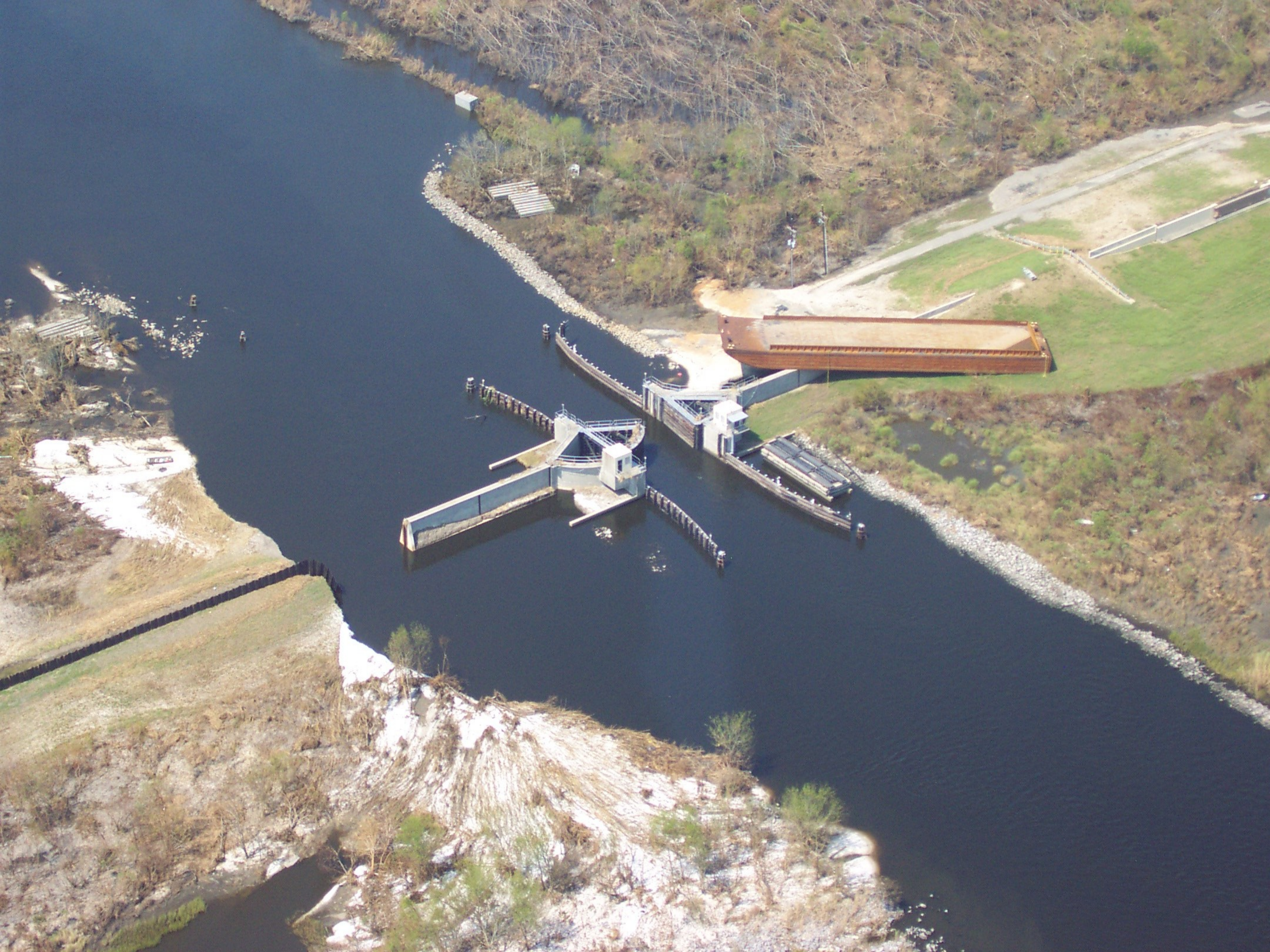

Lake Pontchartrain
Mississippi
River
Legend
Depth at 2.0 ft.
🟪 0-2
🟦 2-4
🟩 4-7
🟧 7-9
9-16

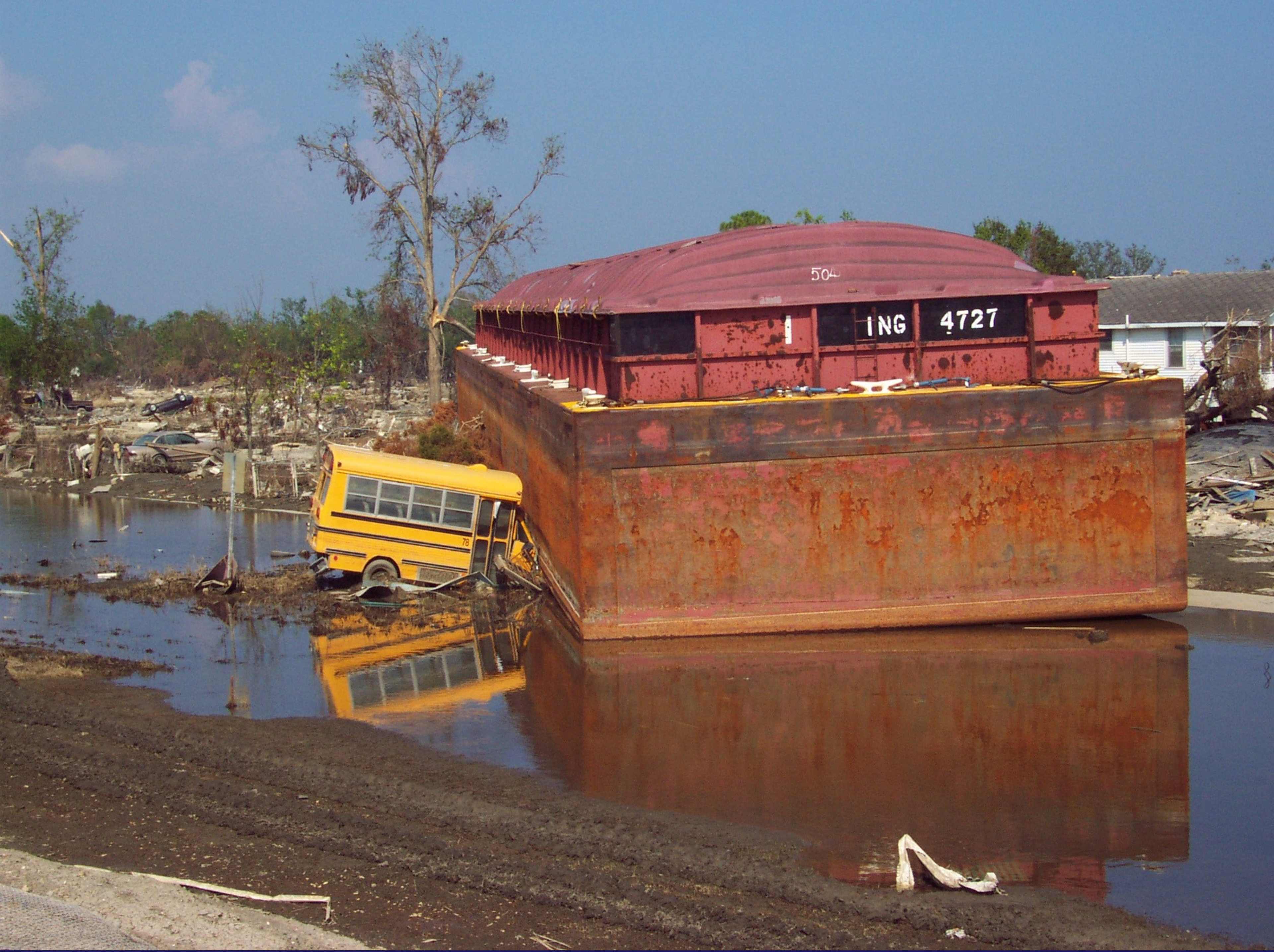


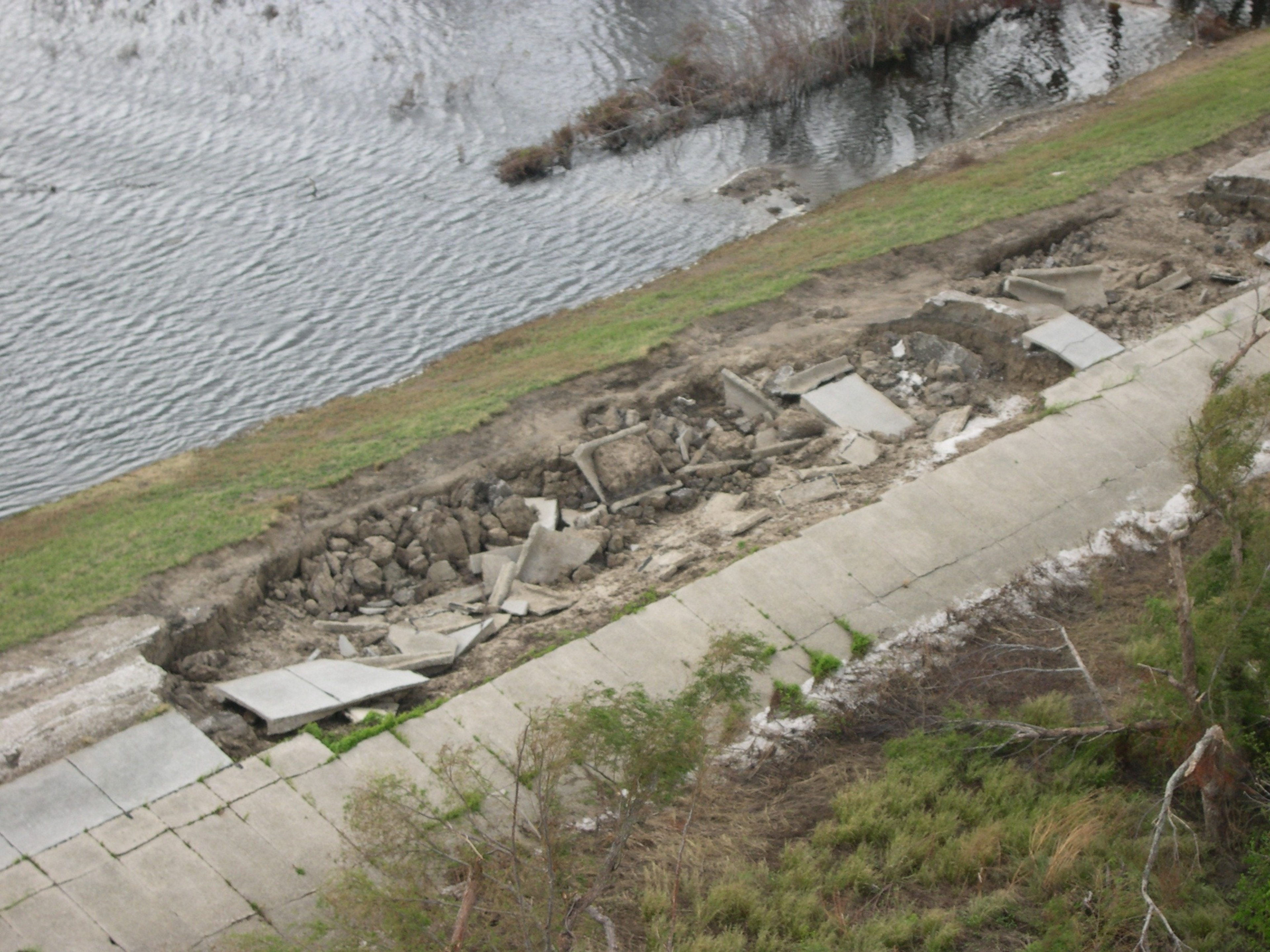






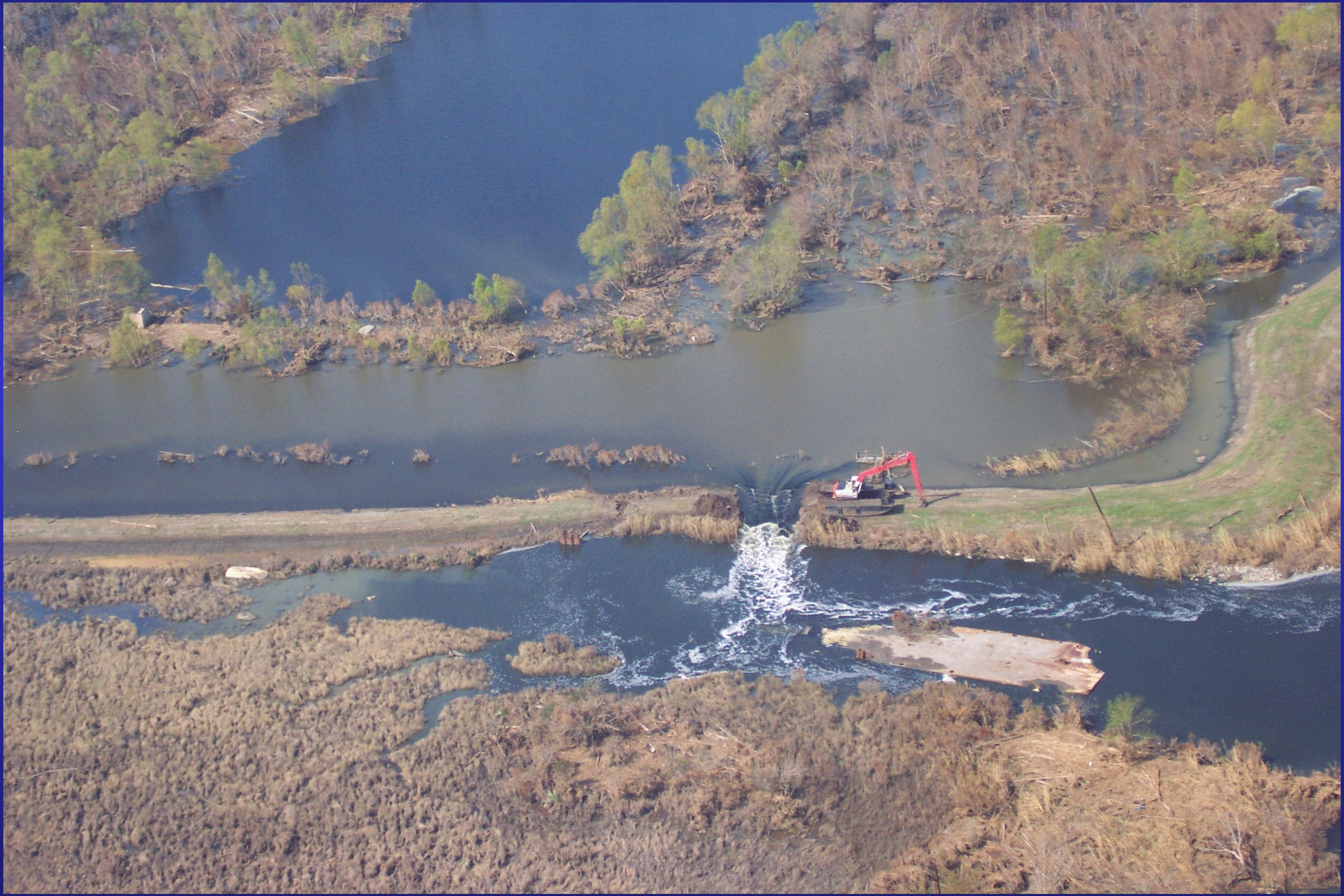



504
ING 4727
78



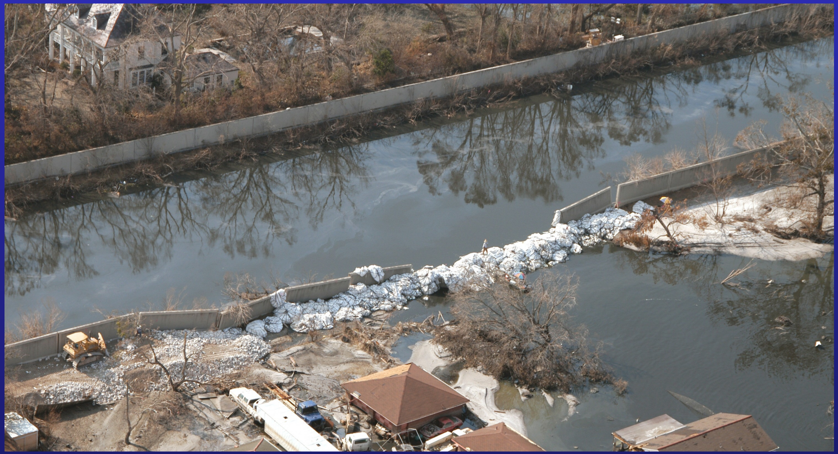
Task Force Unwatering

Basic Strategy

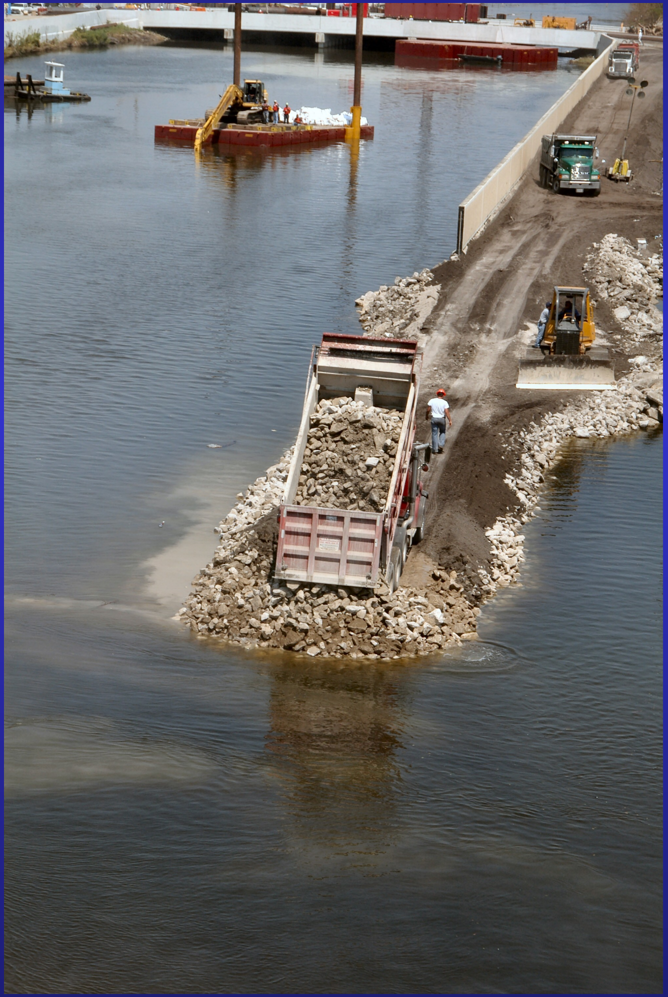


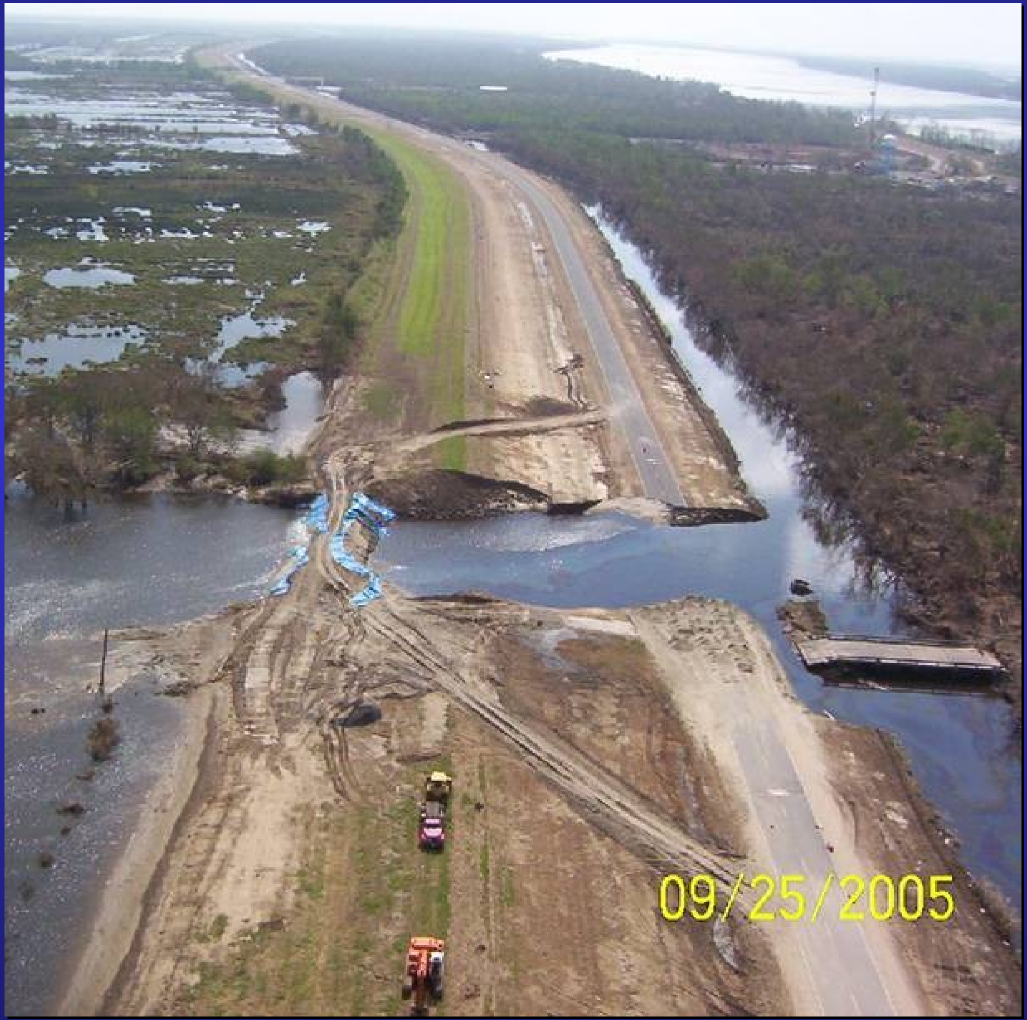
Basic Strategy

US Army Corps of Engineers
Emergency Operations



Basic Strategy



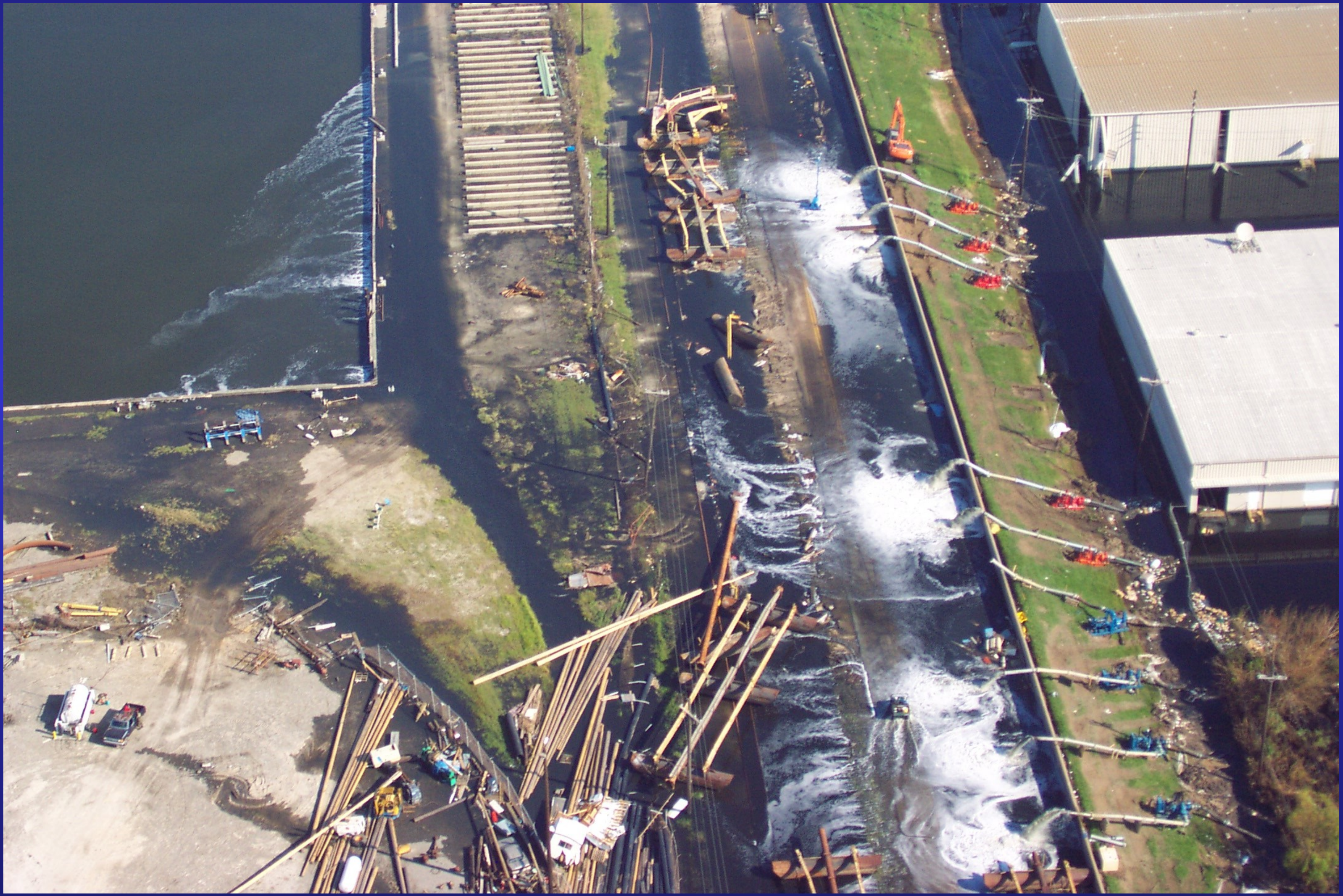


Basic Strategy

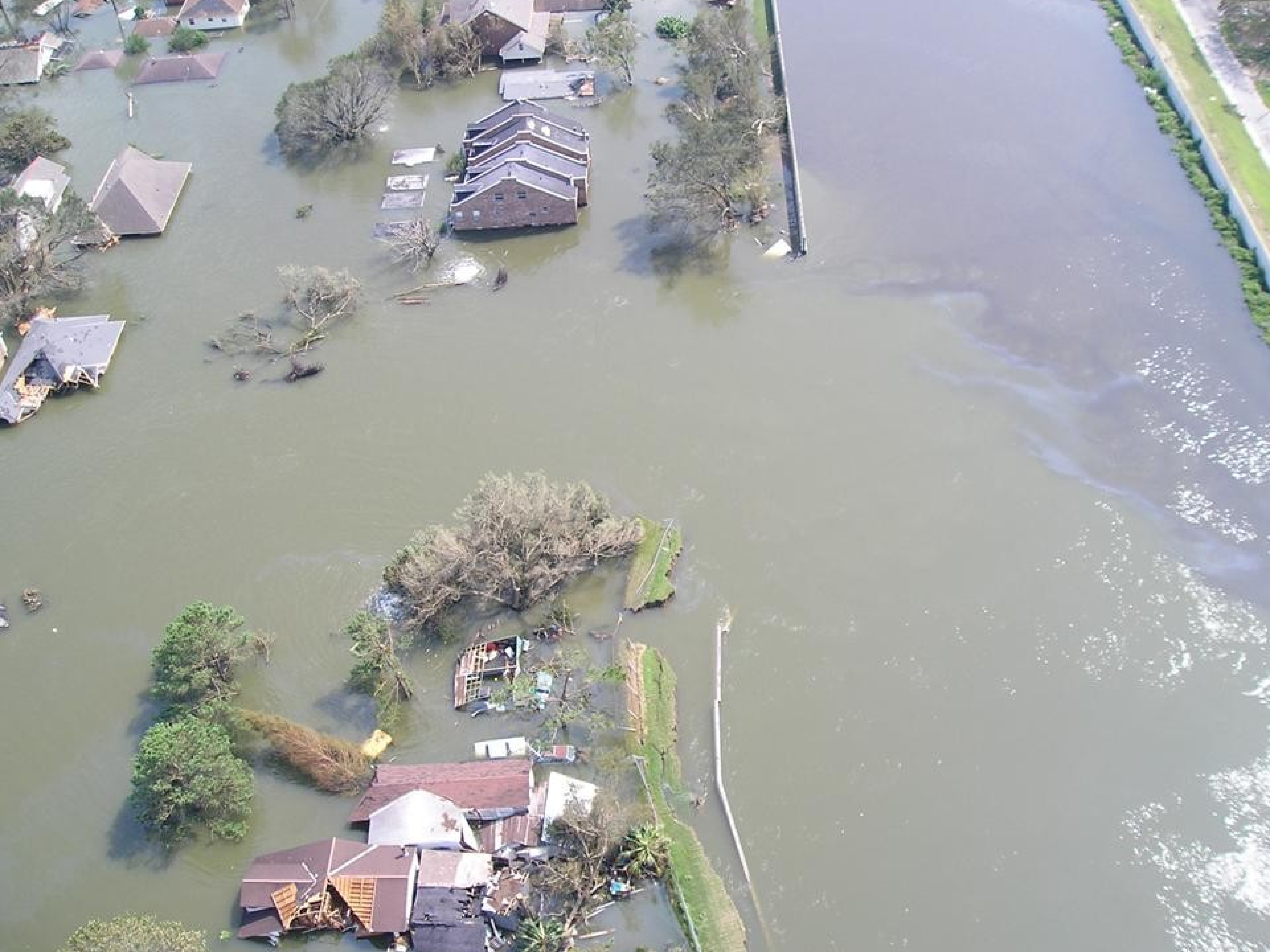
Basic Strategy

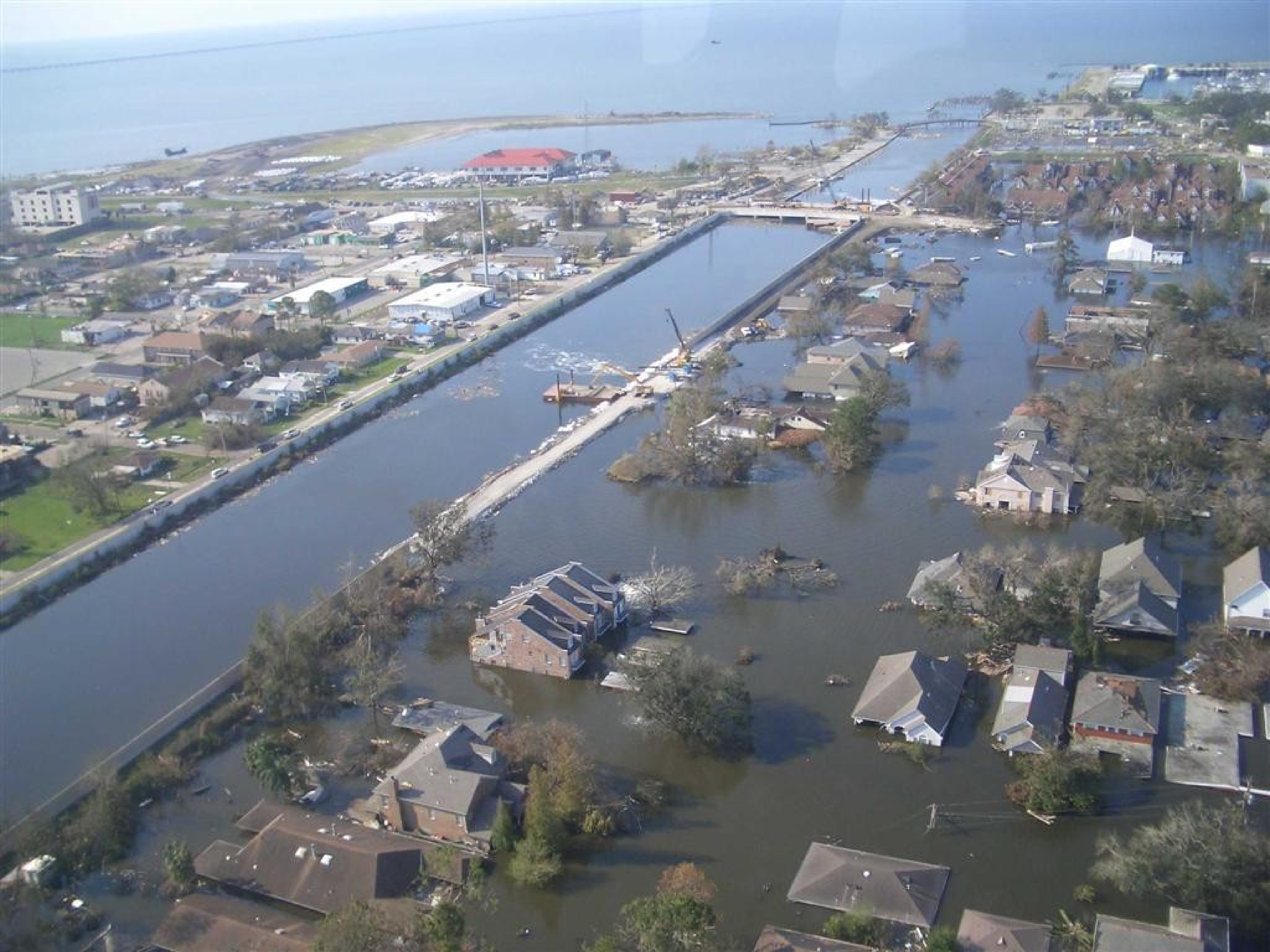
Basic Strategy

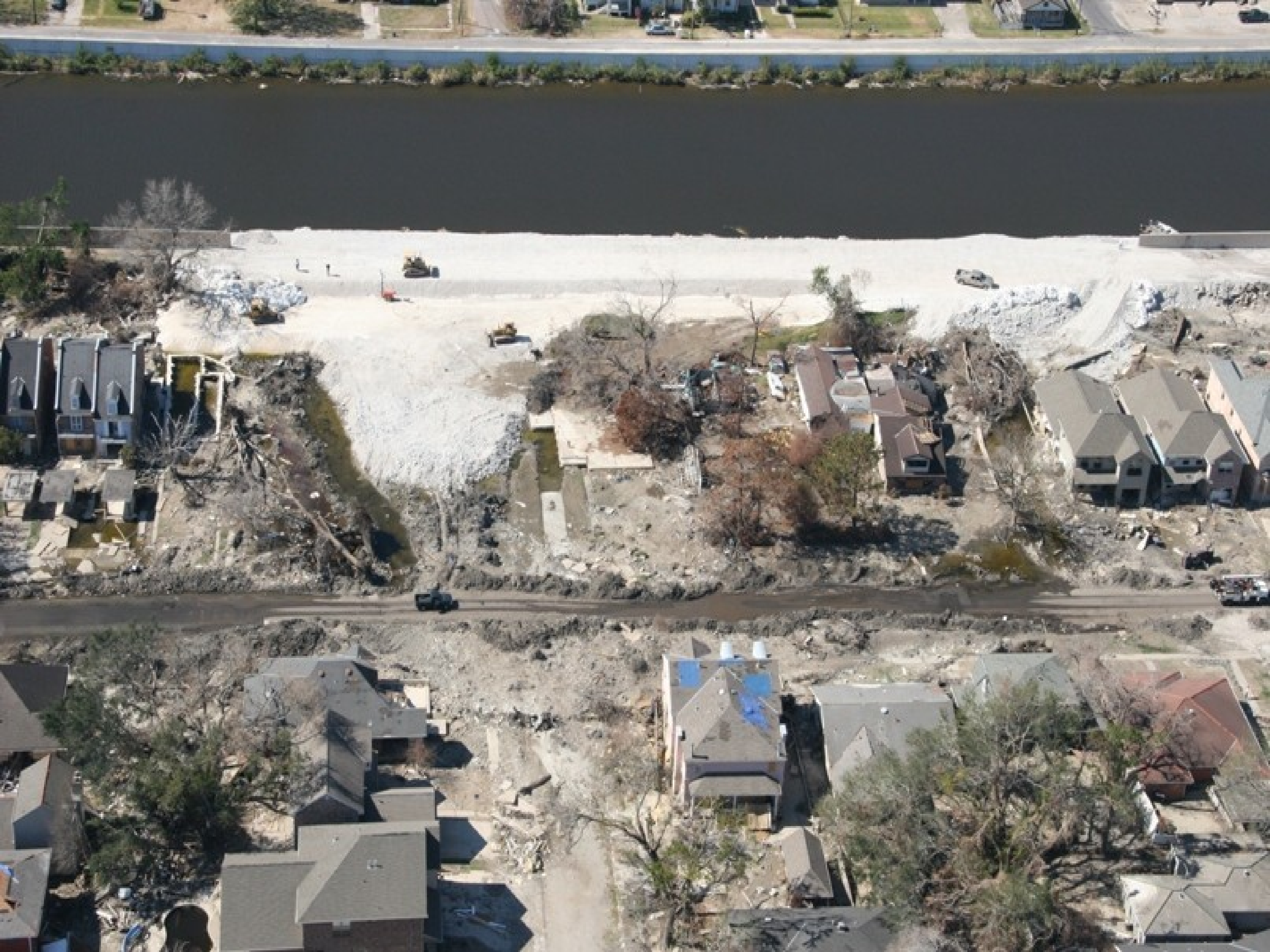
Basic Strategy

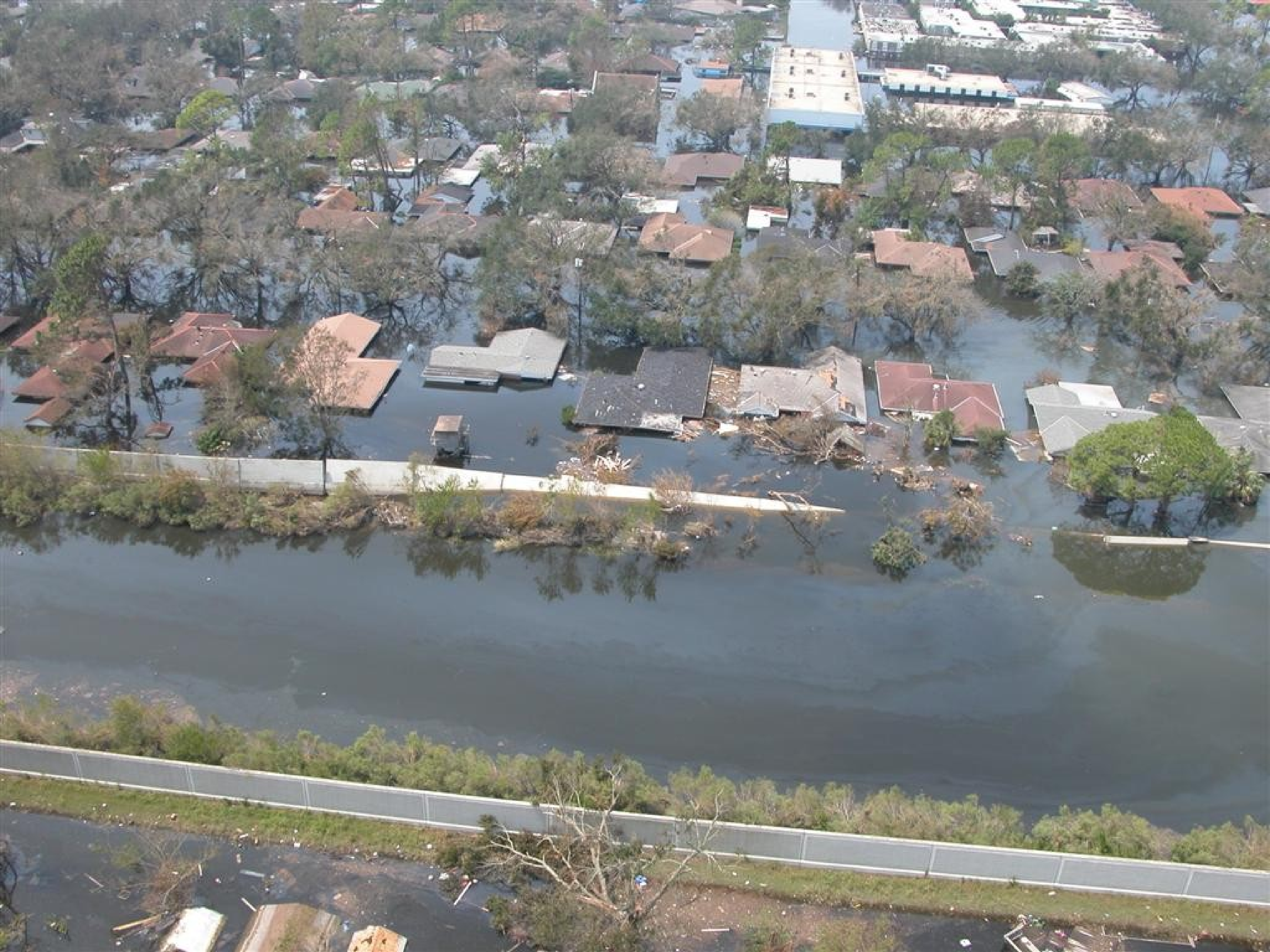


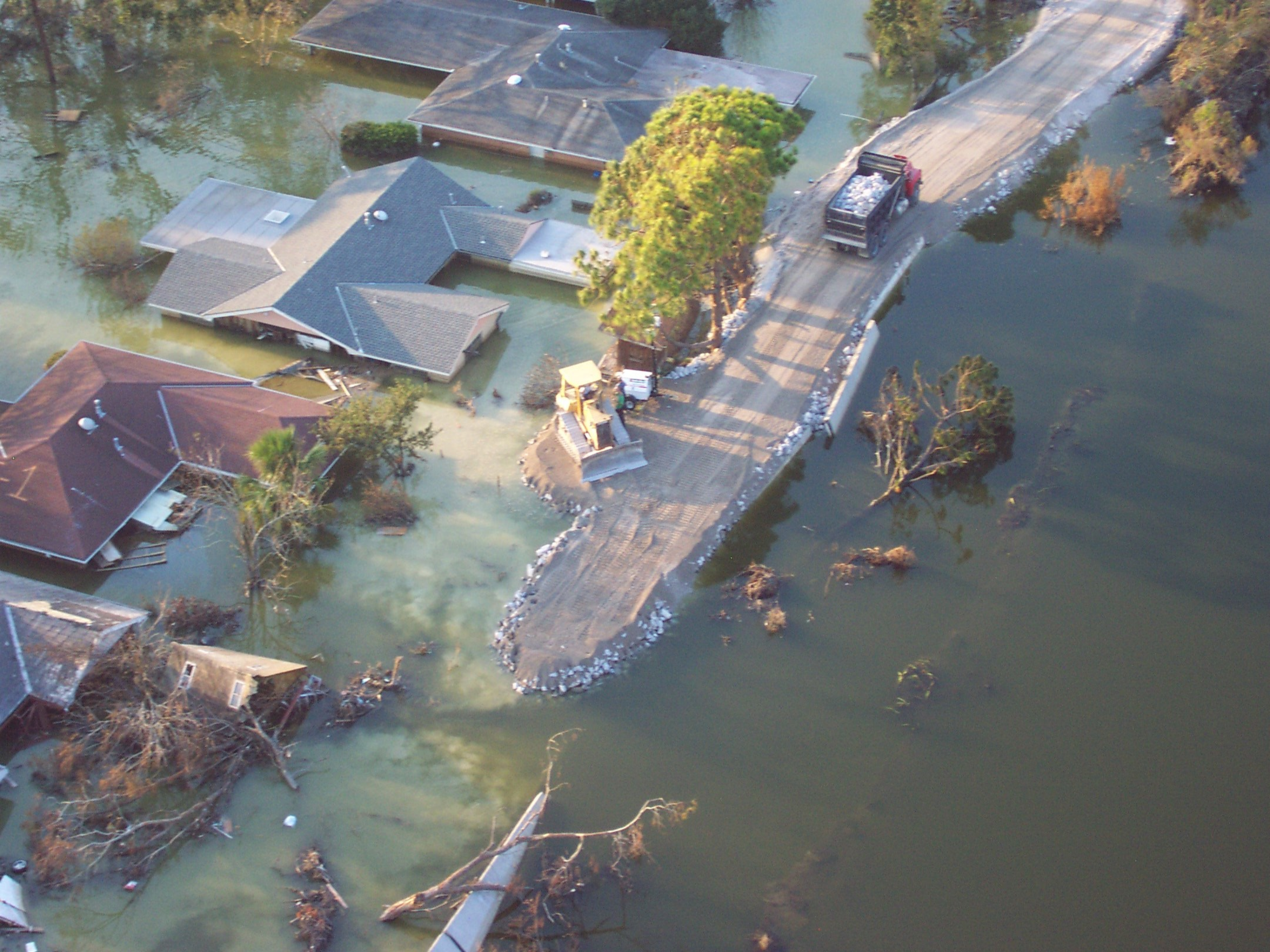
RESULTS

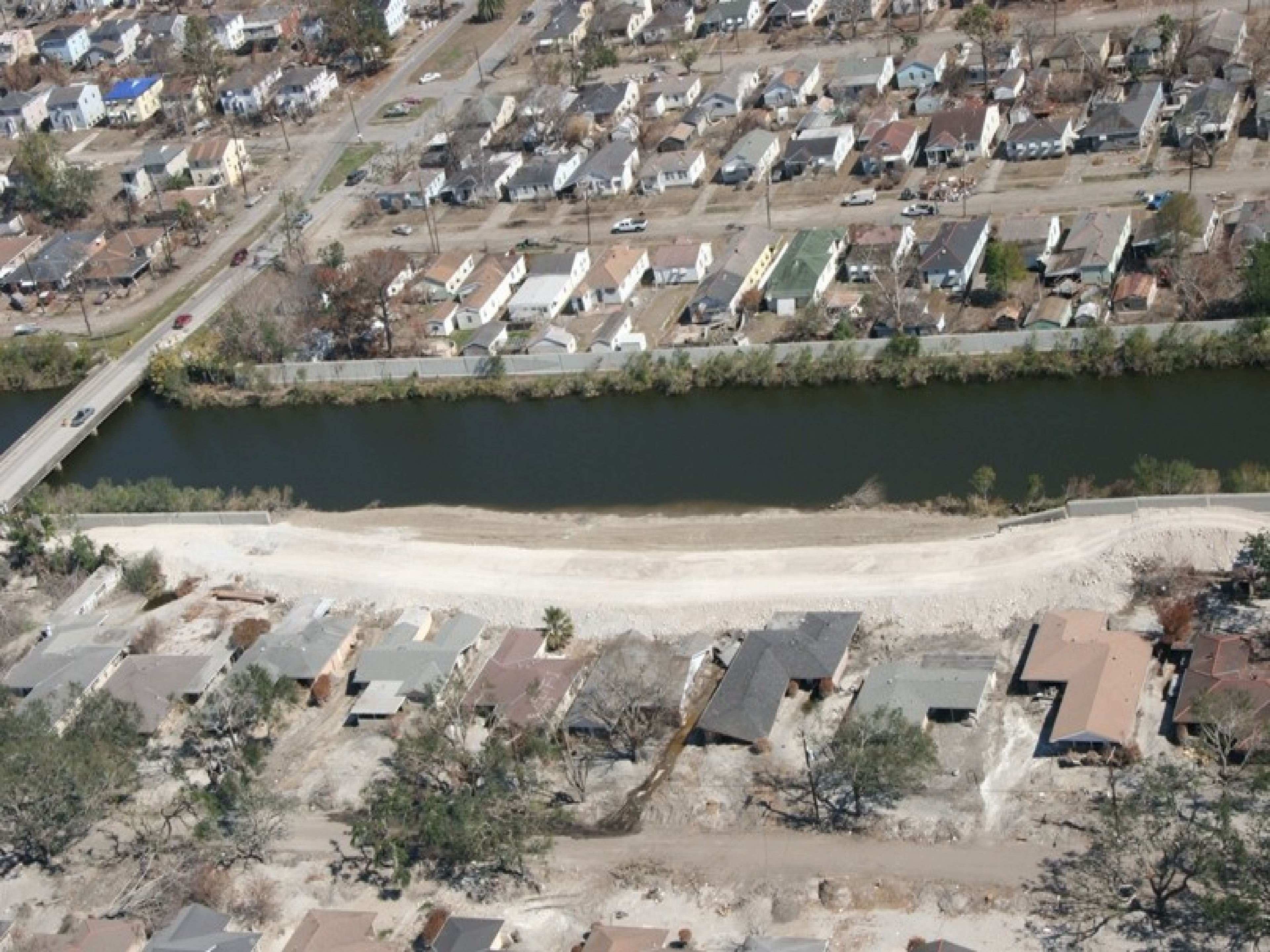


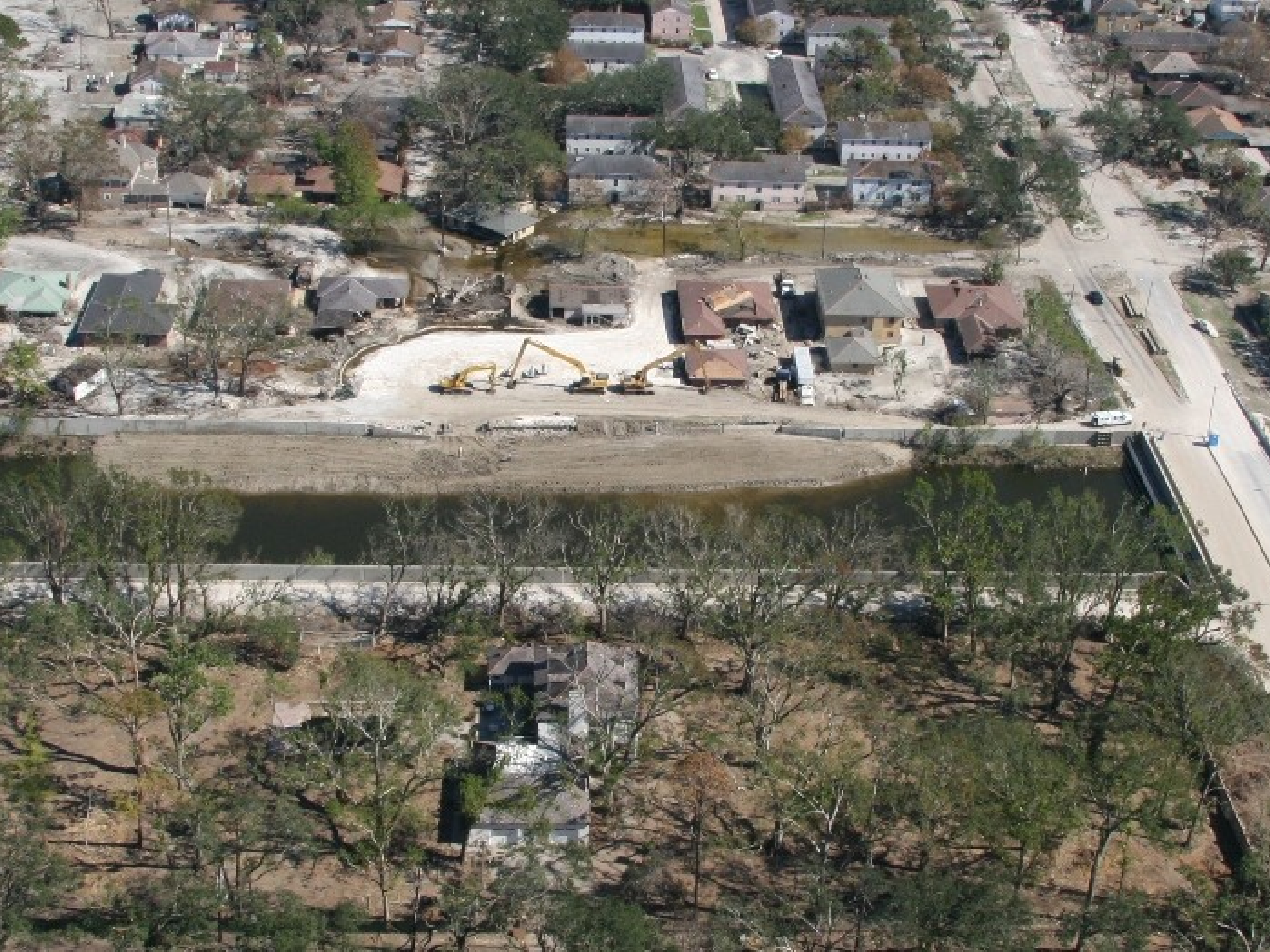


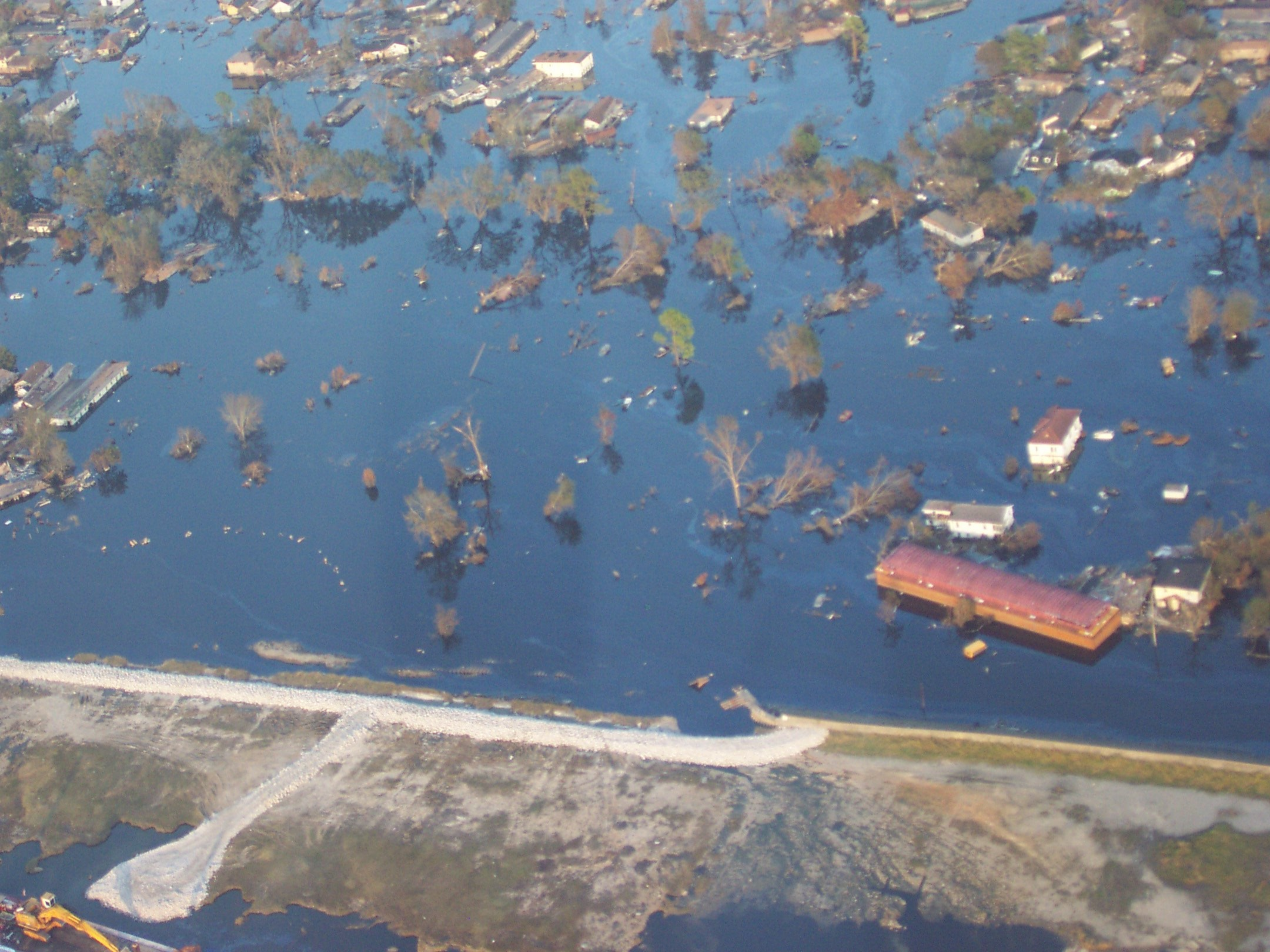


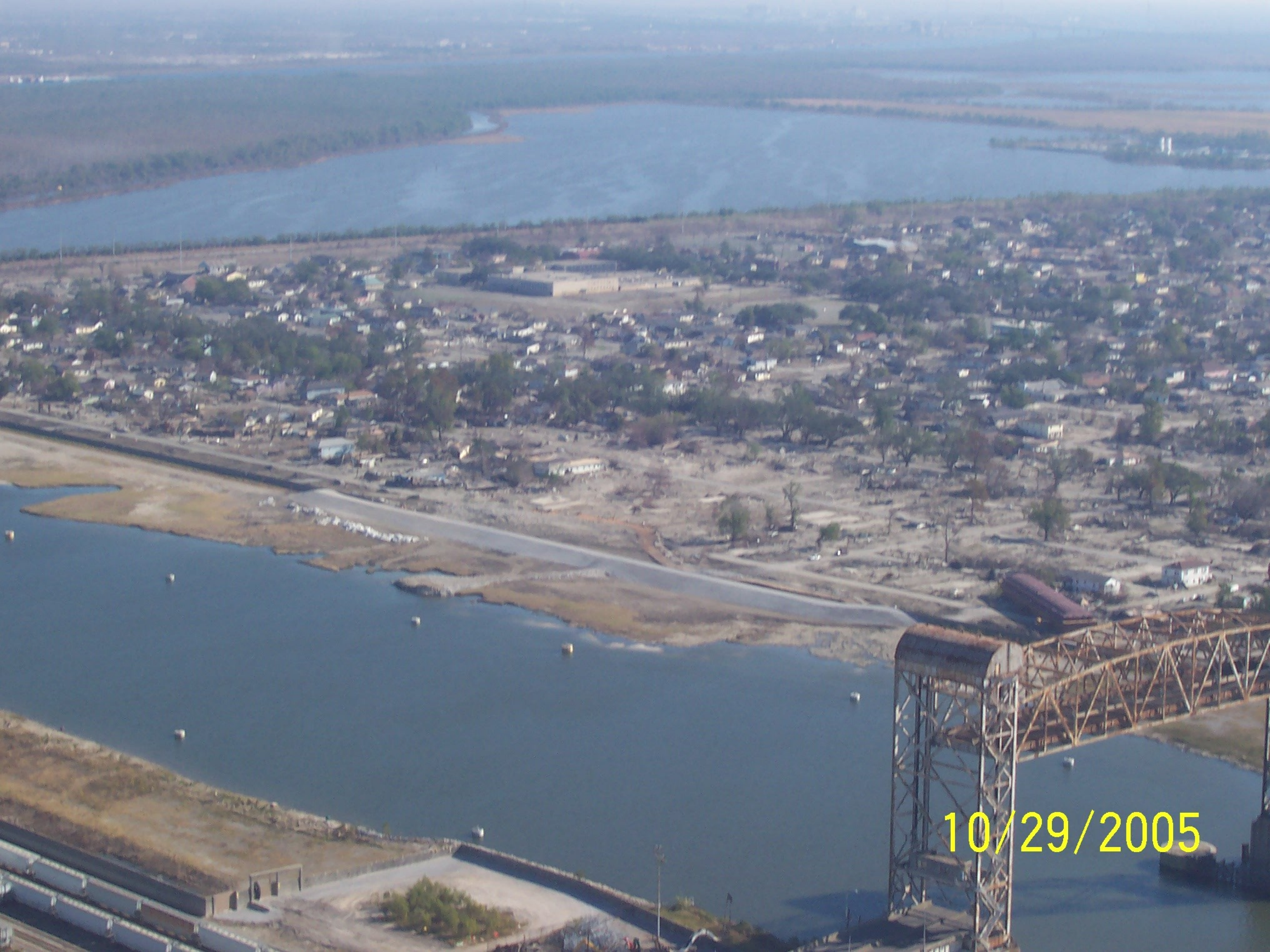








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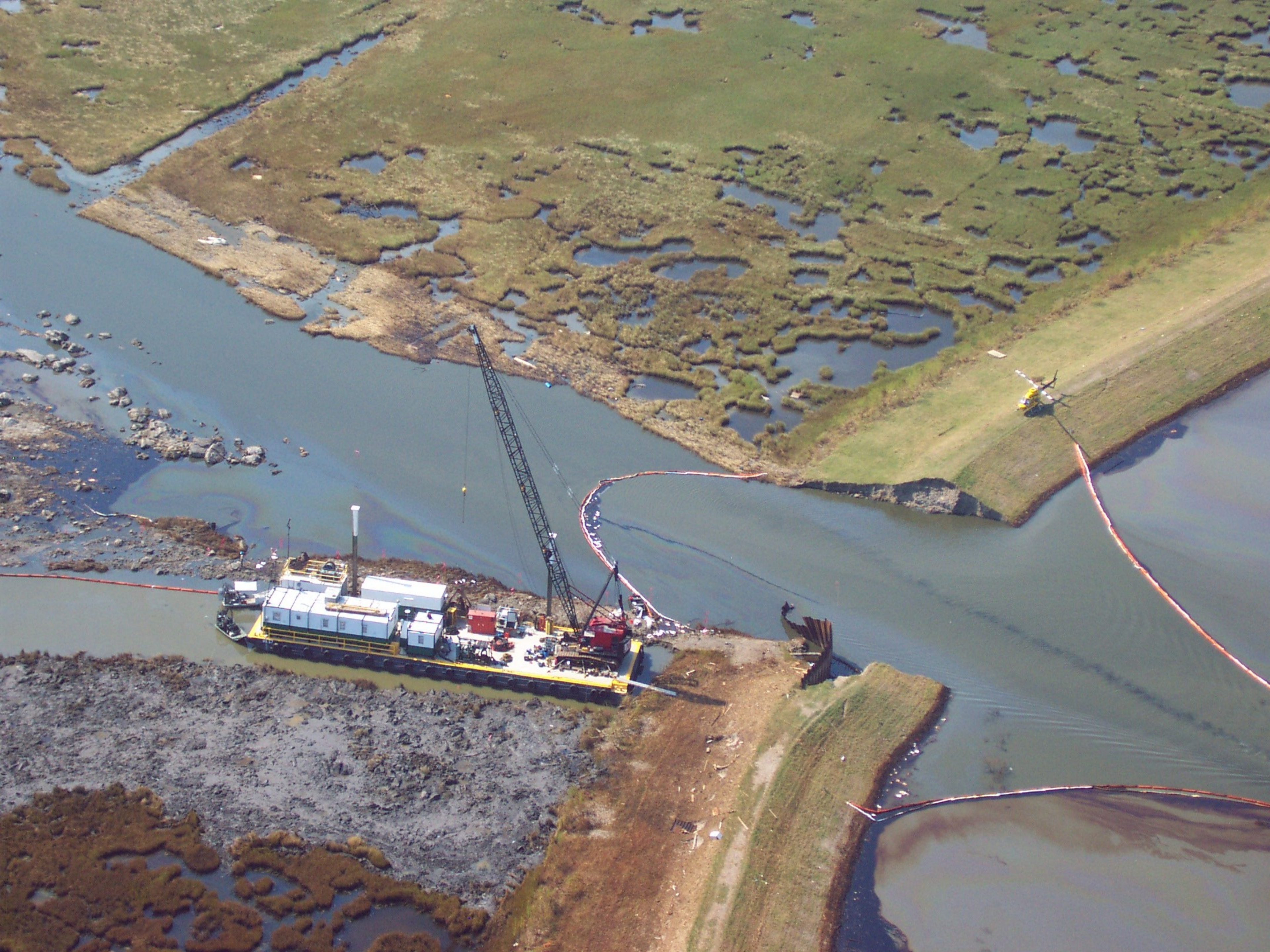


TURBO
XTREME
CAUTION
MAGNUM
Country Joe

MAERSK
SEALAND
SeaLand

Lessons Learned

- Creation of Task Force Unwatering
- Information Demand/Management
- Manage by Parish/Drainage Basin
- Use of Temporary Pump Units
- Communication Challenges
- Environmental Coordination

Drained 250+ Billion Gallons of Water

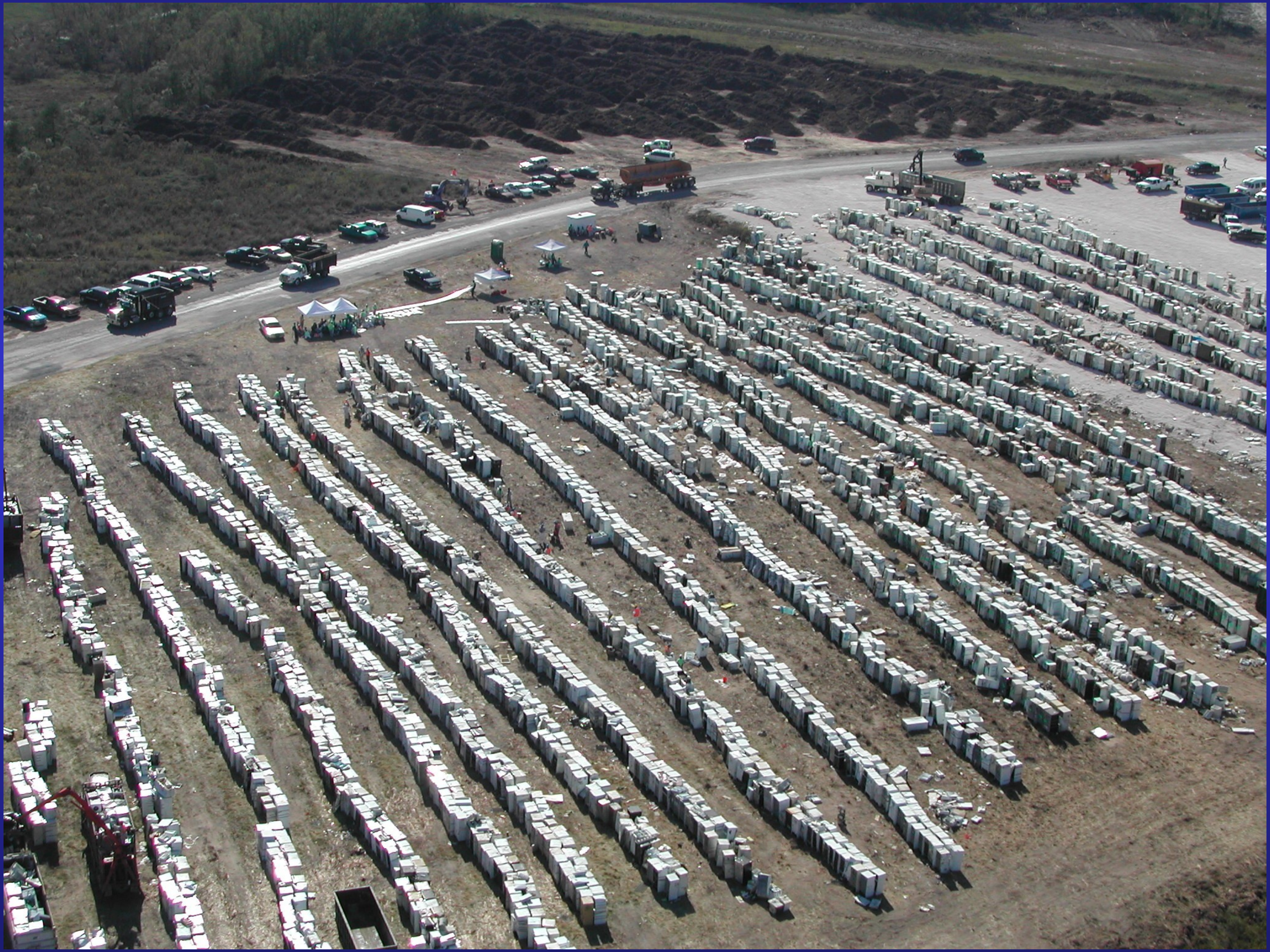
Repaired Nine Major Breaches

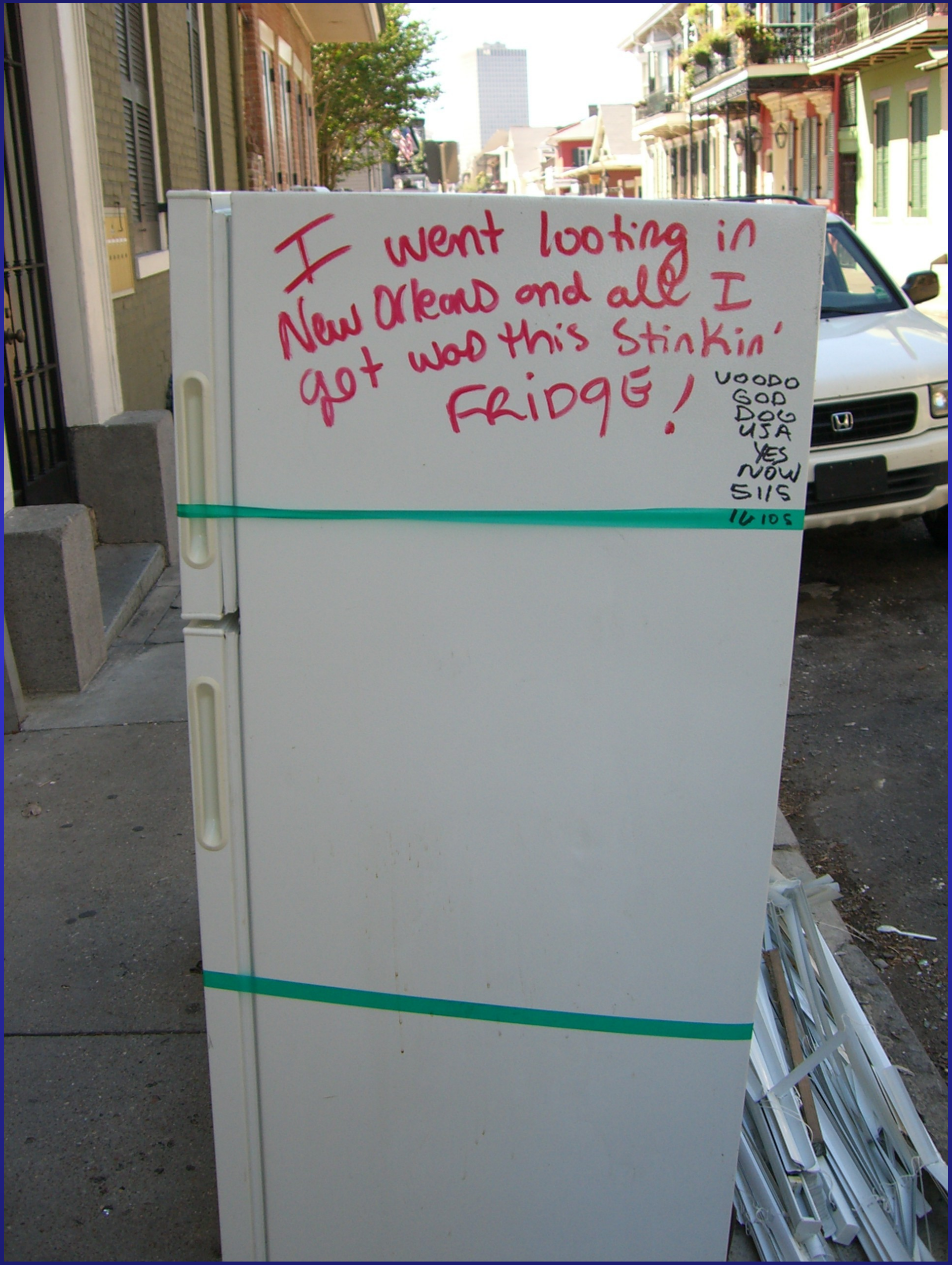
Provided Near Term Protection

The Big Easy

US Army Corps
of Engineers ®

Refrigerator Graveyard




I went looting in
New Orleans and all I
got was this Stinkin'
FRIDGE!
VOODO
GOD
DOG
USA
YES
NOW
5115
16105

US Army Corps of Engineers ®

Buy 2 Maggots
Get 10,000 Free
FRIGIDAIRE
FRONT

MY
TUMMY
HURTS

U.S.ARMY

CNN
Hi MITC
xoxoxo
-Soledad

Hi Mitc
xoxoxo
-Soledad